

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Annual Assessment of the Status of	)	MB Docket No. 02-145
Competition in the Market for the	)	
Delivery of Video Programming	)	

**COMMENTS OF THE  
NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION**

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The National Cable & Telecommunications Association (“NCTA”), by its attorneys, hereby submits its comments on the status of competition in the market for the delivery of video programming. NCTA is the principal trade association of the cable television industry in the United States. Its members include owners and operators of cable television systems serving more than 90 percent of the nation’s cable households. These companies also provide high-speed access to the Internet and other services. NCTA’s members also include more than 200 program networks, as well as suppliers of equipment and other services to the industry.

**INTRODUCTION AND SUMMARY**

The statistics gathered and reported annually by the Commission during the past decade document the steady, unrelenting growth of competition – and, especially, the growth of DBS – in the video marketplace. As these comments will show, this year’s statistics confirm again that competition has irreversibly taken hold and that consumers now have a choice among substitutable alternative providers of video programming.

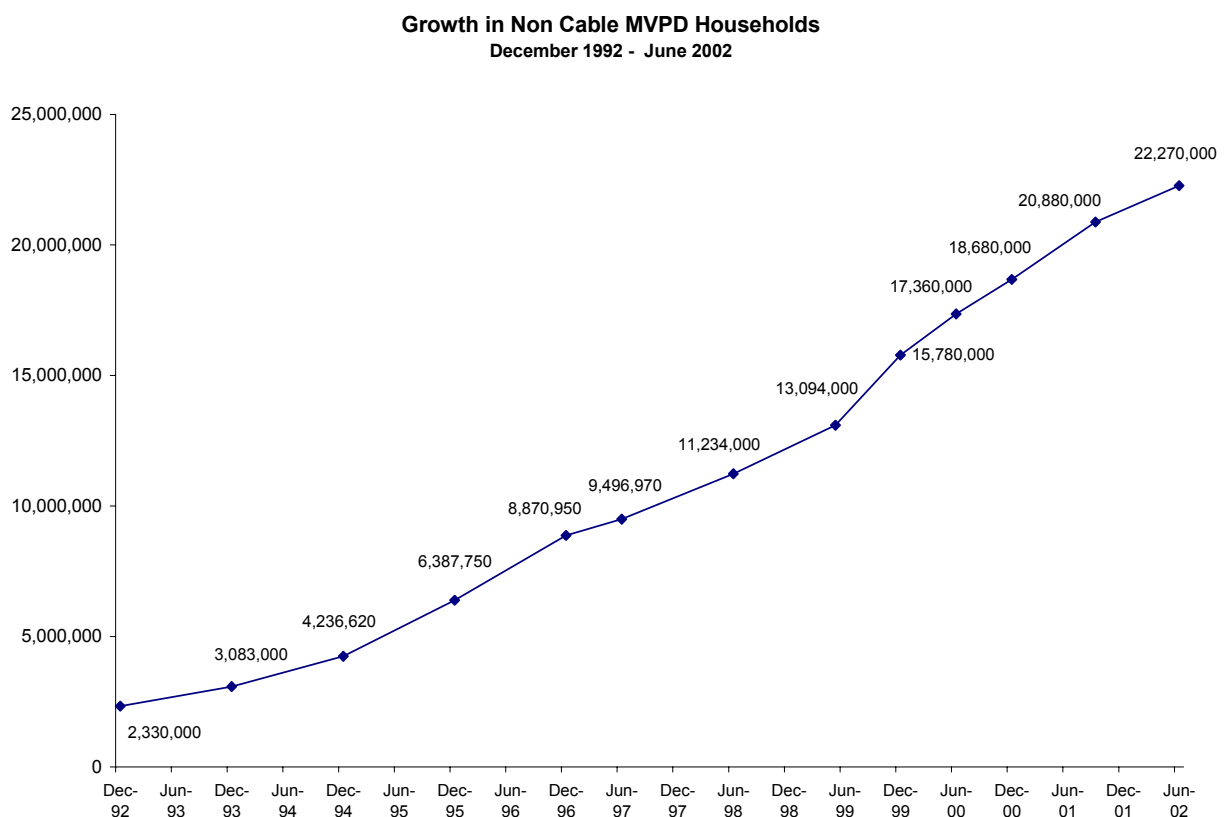
But this year, before turning to the numbers, we urge the Commission to step back and examine the significance of these statistics – and, in particular, to dispel a couple of economic fallacies that have persistently obscured the full extent to which cable operators, as a result, face

competition throughout the nation. The growth of DBS, in terms of subscribership, is unmistakably clear. DBS is available and is marketed in virtually all areas served by cable operators. And the characteristics that once made DBS seem like less than a perfect substitute for cable – for example, the inability to provide local broadcast signals and the high up-front equipment costs – have disappeared.

These facts indicate that cable operators now face a vibrantly competitive marketplace. Nevertheless, some observers insist that because cable still retains a “dominant” share of multichannel video programming distributor (“MVPD”) subscribers, and because cable rate increases have exceeded the rate of inflation, cable does not yet face effective competition and still has the ability to exercise market power. These arguments are fundamentally flawed, and it’s time, once and for all, to put them to rest. As the attached paper by Dr. Debra J. Aron, Director, LECG, and Professor, Communications Systems, Northwestern University, shows, market shares are not a reliable indicator of market power where, as here, an incumbent initially served almost all MVPD subscribers, but now faces rapidly growing competitors that, once launched, have virtually no barriers to expansion and can serve additional subscribers nationwide without substantial incremental costs. Professor Aron also shows that there is no basis for assuming that the rate at which prices increase has anything to do with market power.

As for the numbers, since 1992, cable has gone from a 95 percent share of multichannel video subscribers to a 76 percent share today. As cable’s share has declined, direct broadcast satellite (DBS) providers have emerged as the leading competitor to cable television – growing from virtually no subscribers to over 18 million customers in eight years. As DBS has grown, so too has the total number of non-cable households, as broadband overbuilders and other providers have sprung up in major markets across the country. Today nearly every consumer has several

video distributors to choose from, and nearly one-quarter of subscription television customers – 22.27 million consumer households – choose a multichannel video programming provider other than their local cable operator. This is an increase of nearly 2.3 million customers over last year. Meanwhile, cable’s share of multichannel subscribers has decreased from 77 percent to 76 percent over the past year.



Source: FCC Annual Reports in the Status of Video Competition, June 2001 – June 2002; NCTA research based on Kagan and SkyREPORT data

The cable industry has responded to increasing competition in the video marketplace with aggressive upgrading of facilities and the introduction of innovative new services. Cable operators have invested more than \$65 billion, or over \$1,000 per subscriber in upgraded systems, in private risk capital since 1996 to deploy higher quality television programming and

advanced two-way broadband services to its customers. The rebuilding of more than a million miles of cable plant – which is nearly 80 percent complete – has translated into new services, such as digital cable, digital music, high speed Internet access, telephony, video-on-demand and other interactive applications. As of first quarter 2002, cable had 16 million digital video customers, 8 million high-speed data customers and almost two million residential cable telephone customers.

While the 1996 Telecommunications Act provided the deregulatory environment necessary for cable to invest in this massive infrastructure upgrade, the major spur was vigorous, unyielding competition from direct broadcast satellite and other broadband providers. The total number of DBS subscribers rapidly increased, jumping from 2.9 million in July 1996 to 18.09 million in June 2002.<sup>1</sup> This represents more than a 12 percent annual growth rate. DirecTV and EchoStar are now the third and fifth largest multichannel video programming distributors, with 10.74 million and 7.31 million customers respectively, as of June 2002.

As described in one recent press report, “the fierce competition between cable and satellite TV services is driving a fundamental change in the way television is delivered, giving consumers a growing number of ways to seize control of the programming schedule.”<sup>2</sup> This head-to-head competition – marked by an equal effort to keep pace with the technology curve – is manifested in the new options and service enhancements offered by cable and DBS over the past year. The most significant recent development is the entry into the video-on-demand business. Cable operators are using their high capacity, advanced two-way networks to offer one

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<sup>1</sup> See Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming, CS Docket No. 97-141, Fourth Annual Report, 13 FCC Rcd 1034 (1998); [www.directv.com](http://www.directv.com), [www.dishnetwork.com](http://www.dishnetwork.com) (combined company data).

<sup>2</sup> “Personalizing TV with On-Demand Services. Satellite and cable firms are letting viewers take control of programming.” Los Angeles Times, May 8, 2002.

type of on-demand service, while DBS has countered with another approach to video-on-demand utilizing personal video recording capability. With DirecTV, EchoStar, RCN and others on its flanks, the cable industry is also competing with home video retailers offering everything from much larger video libraries to more flexible rental options to longer store hours – not to mention DVD technology.

Every indication is that consumers want more value from their video providers – in enhancements such as highly niche-oriented programming, and the ability to customize viewing and interact with the vast entertainment and information sources available over today's communications networks. Cable, DBS and other broadband companies are battling it out day-by-day to keep existing customers and attract new ones to this changing landscape.

This competition is not limited to video services. Cable operators, direct broadcast satellite companies, telephone companies and broadband overbuilders are positioning themselves to offer consumers a variety of service offerings, including video, voice and data services. Telephone companies are increasingly partnering with DBS companies to offer video along with their voice and data services. Meanwhile, DBS providers are offering their own high speed Internet access service along with their video services. Cable operators and broadband overbuilders are similarly bundling their voice, data and video services into discounted packages in order to compete more effectively in the broadband marketplace. The economic incentives for offering multiple, diverse services have not only increased competition among established players, but attracted other entrants to the marketplace. These competitive broadband providers are taking every step to use their technology, their content and their regulated and non-regulated services to grow their businesses. This has resulted in service enhancements, product innovation and more choices for consumers of video, voice and data services.



In sum, all of the earmarks of a competitive marketplace are present. It's no longer merely that the prospects for competition are encouraging, or that competition is beginning to take hold. The marketplace today is characterized by full and vibrant competition.

**I. NEITHER CABLE'S MARKET SHARE NOR THE RATE AT WHICH CABLE PRICES HAVE INCREASED ARE MEANINGFUL INDICATORS OF THE STATUS OF COMPETITION IN THE VIDEO MARKETPLACE**

**A. Cable's Share of MVPD Subscribers Is Not an Indicator of Market Power.**

Ten years ago, when Congress enacted the Cable Consumer Protection and Competition Act of 1992, almost all of the nation's MVPD customers were cable subscribers. The DBS services had not yet been launched, and, for most households, there were no MVPD alternatives to their single franchised cable operator. This is not to say that, even then, cable operators had the ability to exercise market power. While there may not have been a choice among MVPDs, consumers had (as they do today) a choice of entertainment services other than MVPD services – including, but not limited to, video entertainment services, such as broadcast television and video rentals – that made demand for cable sufficiently elastic so as to constrain any such market power. Nevertheless, cable's share of MVPD subscribers was close to 100%.

In each of the years since then, as documented by the Commission's annual reports, cable's share of MVPD subscribers has decreased by several percentage points, and the combined share of the DBS providers has shown a corresponding increase.<sup>3</sup> Today, almost 25 percent of all MVPD subscribers purchase their service from a competitor to the incumbent cable subscriber and most of those – over 19 percent – subscribe to DBS.

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<sup>3</sup> While we describe cable's and DBS's relative shares of MVPD subscribers, the marketplace in which cable and DBS compete includes, as described above, many additional alternative sources of entertainment.

While anyone looking at this picture dynamically would be struck by the remarkably rapid growth of competitive alternatives to cable, some observers seem to think that what is more important than the 10-year trend is the annual snapshot of cable's still substantial share of MVPD subscribers. Although cable's share has diminished from almost 95 percent to 76 percent, they assume that no firm that serves 76 percent of all customers can be subject to effective competition. But this focus on market shares is simply wrong. As Professor Aron explains, economists and antitrust agencies often look at market shares in assessing market power. But this is only because market shares are sometimes a good proxy for what really determines market power, which is:

the extent to which competitive alternatives are available or poised to be available, to which customers could turn if the firm attempted to raise price. Most fundamentally, it is the availability of competitive alternatives, not a competitor's current market share, that is relevant to assessing competition.<sup>4</sup>

But sometimes, as Professor Aron points out, market shares are *not* a good indicator of barriers to entry or the availability of viable competitive alternatives, in which case reliance on market shares “can be misleading and induce erroneous conclusions.”<sup>5</sup> This is precisely the case in the marketplace in which cable and DBS compete. First of all, “market share is a particularly inappropriate measure of competition in a market that is emerging from regulated monopoly environment, because an incumbent's market share tends to understate the degree of competition during a transition to competition, and tends to underestimate a competitor's future competitive significance.”<sup>6</sup>

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<sup>4</sup> Statement of Dr. Debra J. Aron, ¶¶ 26-27, Appendix A.

<sup>5</sup> *Id.*, ¶ 27.

<sup>6</sup> *Id.*, ¶ 30.

Such an incumbent's market share is likely to remain high long after it faces – and consumers reap the benefits of – effective competition: “An incumbent that prices competitively need not lose customers to competitors; if the incumbent prices so as to reflect the competitive threat, there is no incentive for its existing customers to move. Customers nonetheless receive the benefits of competition even if the incumbent's market share does not change.”<sup>7</sup>

Second, market shares are not a good measure of market power in a market in which there are no significant barriers to expansion by competitors:

If competitors could expand their output or enter the market with sufficient capacity in a timely fashion to satisfy the demand for alternatives created by the firm's price increase, those competitors would impose a competitive constraint on the firm's ability and desire to raise its price. That is, they would decrease or eliminate its market power.<sup>8</sup>

Therefore, according to Professor Aron, it is important, in assessing competition, to consider “the extent to which the existing facilities of firms can serve new customers without substantial incremental cost.”<sup>9</sup>

Cable's DBS competitors are especially well positioned to serve new customers without substantial incremental cost. Once launched, their satellites beam signals over the entire continental United States. If a cable operator were to increase its prices or lower its quality of service, DBS companies could serve virtually all the cable operator's customers with its existing facilities.

It is rarely the case, in markets involving manufactured goods, that a company that serves only 20 percent of the market can readily expand capacity to serve the entire market. In such

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<sup>7</sup> Id.

<sup>8</sup> Id., ¶ 26.

<sup>9</sup> Id., ¶ 38.

markets, a firm that serves 75 percent of the market may be able to raise prices above competitive levels without worrying about losing many customers – which is why market shares are often used as at least an initial indicator of market power in such markets. But in the marketplace in which cable and DBS compete, a cable operator's high market share indicates *nothing* about market power, because DBS can immediately absorb and serve the vast majority of the operator's current subscribers.

**B. Price Increases That Exceed Inflation Imply Nothing About Market Power**

Every year, in releasing statistics on cable prices, the Commission compares the rate at which prices have increased to the rate of inflation.<sup>10</sup> Although the Commission never explains the relevance of this comparison, some industry critics repeatedly cite the finding that cable prices have increased faster than inflation as evidence that cable operators have no competition and are exercising market power.<sup>11</sup>

As NCTA has often shown, cable's price increases have been accompanied by enhancements to the quality of cable service, including an expansion in the number of channels and services available to subscribers.<sup>12</sup> But whether or not cable prices, when adjusted for quantity and quality of service, really are increasing significantly faster than inflation is beside the point. As Professor Aron explains, the rate at which prices increase implies absolutely nothing about market power.

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<sup>10</sup> See e.g., Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, Report on Cable Industry Prices, 17 FCC Rcd 6301, 6308 (2002). See also Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, CS Docket No. 01-129, 17 FCC Rcd 1244, 1247 (2002) ("Eighth Annual Report").

<sup>11</sup> See, most recently, Consumers Union, "Abusing Consumers and Impeding Competition: The State of the Cable Television Industry, 2002," July 24, 2002 ("Despite the growth of satellite TV, the promise of meaningful competition to cable TV monopolies remains unfulfilled. Cable rates are up nearly three times as fast as inflation.")

As a general matter, “firms with greater market power would be expected to charge higher prices than those with less market power, all else equal.”<sup>13</sup> But:

[i]t is not true . . . that firms with higher market power would be expected to demonstrate a higher *growth rate* of prices over time than would firms with lesser market power, all else equal. The latter proposition, though often asserted or implied in the popular press and similar venues, is not supported by economic logic. Similarly, one would not expect firms with high market power necessarily to demonstrate higher growth rate of prices over time than the rate of inflation, nor, conversely, can one expect that a firm with price growth faster than the rate of inflation has an above-average level of market power.<sup>14</sup>

Professor Aron shows, first, that a monopolist “would have no reason to increase its price unless its costs, demand or technology changed . . . *because it is presumably already charging the profit maximizing price, any deviation from which would simply lower profits.*”<sup>15</sup>

Second, she shows that there is no basis for believing that a monopolist is likely to pass through cost increases to any greater extent than a competitive firm:

In my experience teaching pricing theory and strategy, and consulting on various pricing issues, I have not seen any general theoretical result in the professional economics literature that describes the degree to which cost increases are passed through as a function of different degrees of market power in oligopoly market structures, nor have I seen any cross-industry statistical analyses of this issue. Hence, to my knowledge, there is no theoretical or empirical basis upon which to conclude that continuous, sustained increases in cost would result in higher growth rates of prices in a monopoly market or an oligopoly market than in a perfectly competitive market.<sup>16</sup>

While there is no basis for inferring that a firm that increases its prices faster than inflation has market power, Professor Aron notes that price growth might be associated with market

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<sup>12</sup> See e.g., NCTA Comments, CS Docket No. 99-230 at 35-38 (Aug. 6, 1999).

<sup>13</sup> Statement of Dr. Debra J. Aron, ¶ 8.

<sup>14</sup> *Id.*, ¶¶ 9-10 (emphasis in original).

<sup>15</sup> *Id.*, ¶ 16 (emphasis in original).

<sup>16</sup> *Id.*, ¶¶ 22-23. Indeed, as Professor Aron shows, there are several conceivable scenarios in which a monopolist would be expected to pass through cost increases to a *lesser* extent than a competitive firm. See *id.*, ¶¶ 20-21.

power if a firm's "market power itself is growing over time."<sup>17</sup> But "regardless of the existing market power of the ostensible monopolist, if the evidence is that the competitive power of rivals is growing, rather than declining, one would not generally expect the growth in prices to be attributable to market power factors."<sup>18</sup> As the Commission's annual reports have shown, the market shares and competitive power of cable's rivals – in particular, the two national providers of DBS service – have been rapidly and steadily growing.

In sum, Professor Aron's conclusion is that "there is no theoretical reason to predict as a general matter that greater market power would be expected to lead to higher growth rate of prices, nor is there any reason to predict that a market exhibiting higher growth rates of prices is characterized by firms with greater market power."<sup>19</sup> Thus, whether or not cable prices have increased faster than inflation has nothing to do with what is at issue in this proceeding, *i.e.*, the "status of competition in markets for the delivery of video programming." The Commission should make clear that this is the case.

## **II. THE EVIDENCE SHOWS THAT THE MARKET FOR THE DELIVERY OF VIDEO PROGRAMMING IS UNDENIABLY ROBUST AND COMPETITIVE**

### **A. DBS Is A Strong Nationwide Competitor Whose Market Share Continues to Grow**

In the Eighth Annual Report, the Commission acknowledged that "competitive alternatives continue to develop."<sup>20</sup> But as the Commission has tracked these developments over the past decade, it has become clear that competition is not merely "developing." Highly viable, fully substitutable alternatives to cable are available, and a substantial portion of MVPD

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<sup>17</sup> Id., ¶ 17 (emphasis added).

<sup>18</sup> Id. (emphasis added).

<sup>19</sup> Id., ¶ 24.

subscribers are choosing them. The households that choose not to subscribe to cable in favor of another multichannel video provider have grown nearly ten-fold since 1992. Today more than 22.27 million customers obtain multichannel video programming from a company other than their local cable operator.

**Subscribers to Multichannel Video Program Distribution (MVPD) Services  
June 2002**

<b>MVPD Service Provider</b>	<b>Subscribers (in Millions)</b>	<b>Percent of MVPD Market</b>
DBS (high power satellite)	18.09	19.23
C-Band (low power satellite)	0.73	0.78
MMDS (microwave)	0.49	0.52
SMATV (private condo/apt)	1.60	1.70
Local Telephone Companies	0.16	0.17
Broadband Competitors	1.20	1.28
<b>Total Non-Cable</b>	<b>22.27</b>	<b>23.67</b>
<b>Cable</b>	<b>71.82</b>	<b>76.33</b>
<b>TOTAL</b>	<b>94.09</b>	<b>100.00</b>

Source: NCTA Research Department estimate based on data from A.C. Nielsen, Paul Kagan Associates, Cable World, SkyREPORT, and public reports of individual companies.

The Commission recognized two years ago that DBS subscribership, in particular, “is growing in urban and suburban communities and is no longer viewed as a predominantly rural service.”<sup>21</sup> There can no longer be any doubt that this is the case. Between June 2001 and June 2002, the number of DBS subscribers increased from 16 million to over 18 million, a 12 percent

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<sup>20</sup> Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, CS Docket No. 01-129, 17 FCC Rcd 1244 (2002) (“Eighth Annual Report”).

<sup>21</sup> Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, CS Docket No. 00-132, 16 FCC Rcd, 6005, 6038 (2001) (“Seventh Annual Report”).

annual growth rate. DirecTV and EchoStar are running ads in major metropolitan newspapers across the country, specifically targeting cable customers.<sup>22</sup>

As of April 2002, direct to home penetration exceeded 15 percent in 44 states, 20 percent in 36 states, 25 percent in 22 states, 30 percent in seven states and 40 percent in one state.<sup>23</sup>

**States With Direct-To-Home (DTH) Dish Penetration  
Of Fifteen Percent or More (April 2002)**

<b>State</b>	<b>% of TVHH with DTH</b>	<b>State</b>	<b>% of TVHH with DTH</b>
Vermont	41.72	Oklahoma	24.93
Montana	39.45	South Dakota	24.87
Wyoming	35.16	Iowa	24.34
Mississippi	34.33	Maine	24.30
Idaho	31.18	Wisconsin	24.24
Arkansas	31.17	Minnesota	23.24
Utah	30.46	Nebraska	22.34
Missouri	29.94	Oregon	21.96
Georgia	28.62	Florida	21.91

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<sup>22</sup> See Appendix B.

<sup>23</sup> NCTA has previously suggested that, with DBS penetration substantially exceeding 15% in more and more states, the Commission should alter its current rule that, for rate regulation purposes, every cable system is presumed not to be subject to effective competition unless and until it demonstrates that competing MVPDs serve at least 15% of the households in its franchise area. As NCTA pointed out, where statewide penetration significantly exceeds 15%, it would be reasonable and appropriate to presume that cable systems are subject to effective competition. The Commission has sought comments on this proposal in its Notice of Proposed Rulemaking to revise the rate regulation rules. MB Docket No. 02-144, FCC 02-177, ¶ 52 (released June 19, 2002), and NCTA will address the matter further in that proceeding.



North Carolina	28.35	California	21.82
North Dakota	27.88	Kansas	21.43
West Virginia	27.52	Michigan	20.87
Kentucky	27.48	Illinois	20.08
Indiana	27.14	Washington	20.03
Texas	27.07	Louisiana	19.87
Virginia	27.04	Ohio	18.65
New Mexico	26.74	Nevada	18.33
South Carolina	26.53	Maryland	18.11
Tennessee	26.24	New Hampshire	17.82
Colorado	25.88	Alaska	16.54
Alabama	25.78	Delaware	16.00
Arizona	25.26	New York	15.47

Source: SkyTRENDS SkyMAP, April 2002; [www.skyreport.com](http://www.skyreport.com)

A few months ago, in declining to impose a spectrum cap on the DBS industry, the Commission reiterated that “we continue to view DBS as offering a strong competitive alternative to cable systems . . . .”<sup>24</sup> Indeed, as one press report put it: “[i]n terms of subscriber additions, cash-flow growth and ability to compete head-to-head with cable-television offerings, the latest results exceeded the expectations of many analysts.”<sup>25</sup> DirecTV “expects to acquire 1.2 million net new U.S. subscribers by the end of the year [2002], compared with the one million projected.”<sup>26</sup> The first quarter 2002 numbers, which were 342,000 net new U.S. subscribers, set a company record for total first quarter additions.<sup>27</sup> And DirecTV posted higher-than-expected

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<sup>24</sup> Policies and Rules for the Direct Broadcast Satellite Service, Report and Order, IB Docket No. 98-21, rel. June 13, 2002, at ¶ 144.

<sup>25</sup> “Hughes Electronics Shows Growth,” The Wall Street Journal, April 16, 2002. As was observed at the end of 2001, analysts “are all saying one and the same thing: point-to-point direct broadcast satellite (DBS) remains to be very very hot.” Industry Watchers Predict Future of Satellite Business, April 3, 2001, [www.satnews.com/feature/feature-dbs-pp.html](http://www.satnews.com/feature/feature-dbs-pp.html).

<sup>26</sup> “Hughes Electronics Shows Growth,” The Wall Street Journal” April 16, 2002.

<sup>27</sup> Id.

second quarter results.<sup>28</sup> EchoStar's net subscriber gains totaled 1.67 million in 2001, with similar gains predicted in 2002.<sup>29</sup>

DirecTV now has more customers, 10.74 million, than all but two cable operators (AT&T Broadband and AOL Time Warner), which makes it the third largest multichannel video provider in the nation. Meanwhile, EchoStar, the second-largest DBS provider with 7.34 million customers, has more subscribers than all but three cable companies.

Through a combination of nationwide coverage, government-mandated access to programming, advanced digital technology and aggressive marketing, DBS has experienced a dramatic eight-year growth trend. DBS benefits from greater efficiencies associated with nationwide advertising and promotion and uniform national pricing. It also is not subject to local franchise fees and is not required to devote money and resources to public access studios, institutional networks and other franchise requirements. Equipment prices have steadily declined to nearly zero, and with the passage of the Satellite Home Viewer Improvement Act of 1999, the last impediment to DBS's unbridled growth was removed. DirecTV and EchoStar are able to retransmit local broadcast signals into their market of origin. As of July 2002, these two major DBS providers provided local television signals in 48 markets reaching more than 65 million television households. EchoStar's Chairman & CEO, Charlie Ergen, expects to serve as many as 50 markets with local broadcast channels following the launch of the company's next satellite later this summer.<sup>30</sup>

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<sup>28</sup> "DirecTV Performance Boosts Quarterly Results for GM Unit," The Wall Street Journal July 16, 2002.

<sup>29</sup> "EchoStar's Loss Narrows As Subscribers Increase," Los Angeles Times, May 3, 2002 (reporting EchoStar added more subscribers than analysts expected and sales rose 28%).

<sup>30</sup> "Dish to Add Nat Geo Channel," Multichannel News, July 9, 2002.

Given their sheer size, DBS providers have had no difficulty negotiating for carriage of virtually all satellite-delivered programming services. A glance at the channel line-ups of DirecTV and EchoStar reveals a diverse array of programming – virtually the same as that available from cable companies. Indeed, DirecTV continues to have exclusive rights to valuable sports programming – the NFL “Sunday Ticket” football package.<sup>31</sup> Likewise, DirecTV secured the exclusive national rights to CBS’ out-of-market broadcast of the NCAA Basketball tournament for the last four years.<sup>32</sup> DirecTV now offers up to 225 channels of programming and other services. EchoStar provides up to 210 channels. If the proposed merger of DirecTV and EchoStar is consummated, the combined entity would be capable of offering more than 400 channels.

Pending the outcome of the merger, however, DirecTV and EchoStar are losing no time exploring ways to maintain their lead position in subscriber growth. They have responded to cable’s infrastructure investment with a series of joint ventures and marketing arrangements and new interactive and broadband services. Vivendi Universal SA invested \$1.5 billion in EchoStar earlier this year, a major endorsement of the satellite provider’s ability to compete in the future.<sup>33</sup> This strategic alliance is aimed at providing a major distribution outlet for Vivendi Universal’s content and technology in the U.S. via new programming and interactive television services.

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<sup>31</sup> The Future of Sunday Ticket, December 5, 2001, [www.sportingnews.com](http://www.sportingnews.com).

<sup>32</sup> “DirecTV Secures Exclusive National Rights to CBS Out-of-Market Broadcasts of Men’s NCAA Basketball Championship for Fourth Straight Year,” DirecTV Press Release, December 10, 2001.

<sup>33</sup> “EchoStar, Vivendi Universal Form Strategic Alliance to Offer New Programming, Interactive Television Services for Consumers,” Press Release, December 14, 2001; “EchoStar Communications Corporation Completes Vivendi Universal Investment,” Press Release, January 22, 2002.

DirecTV also made a significant strategic move earlier this year. It expanded and restructured its relationship with TiVo, Inc. to attract more customers.<sup>34</sup> DirecTV will sell advanced set-top boxes at lower cost incorporating TiVo's Series2 platform, which has such advanced features as video-on-demand, online games, and the ability to display digital images and play digital audio files. The new equipment is to be available sometime in the third quarter of 2002 with advanced services available next year. EchoStar too has digital video recording (DVR) capability built into its advanced set-top equipment.<sup>35</sup>

As one observer put it:

For the satellite providers, PVR technology isn't just an option anymore; it's crucial to their strategy for winning over cable subscribers and bolstering revenues. The big satellite firms EchoStar and DirecTV, awaiting federal approval to merge, lack the network architecture to support "true video on demand (allowing for a movie to be paused and rewound, which requires a two-way connection). So the satellite companies are banking on combo PVR-tuners, aiming to put TiVo-like "servers" in subscribers' homes and have shows and movies stored there. DirecTV has partnered with TiVo to offer the boxes, while EchoStar is marketing a proprietary PVR-tuner. The two have already pushed the technology into more than 800,000 homes, and both are planning marketing campaigns to sell more powerful boxes this year.<sup>36</sup>

In May, DirecTV also announced plans to test subscription video-on-demand with Starz Encore Group.<sup>37</sup> DirecTV will offer the SVOD service to any subscriber who orders Starz's premium movie package and a TiVo digital recording service. After the test, the company will explore adding other premium program networks, such as HBO and Showtime, as well as basic

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<sup>34</sup> "DirecTV fine-tunes TiVo deal," CNET News.com, February 21, 2002. DirecTV is also planning to offer telephone services before the end of this year. Using Voice-over-Internet Protocol (VoIP), DirecTV modems will have telephone capability built into the box. "DirecTV to let customers make calls," CNET News.com, April 1, 2002.

<sup>35</sup> The Ad Zappers: Video recorders like TiVo, at first slow to catch on, are shaking up the TV business," Time, June 10, 2002.

<sup>36</sup> Id.

<sup>37</sup> "DirecTV to Test Starz on Demand," Multichannel News, May 28, 2002.

networks. DirecTV also has a partnership with Blockbuster, Inc., which sells DirecTV equipment and programming packages and a joint pay-per-view service called Blockbuster Ticket.<sup>38</sup>

DBS providers are also seeking to gain customers for burgeoning high definition (“HDTV”) programming and interactive television services. DirecTV offers three national high definition program services: HDNet, Showtime and HBO, as well as some HDTV pay-per-view programming.<sup>39</sup> EchoStar offers HBO, Showtime, Discovery HD Theater, pay-per-view and some broadcast digital stations. It also plans to launch multiple interactive shopping services over the DISH Network later this year.<sup>40</sup> The service will be called “Dish Wallet,” allowing consumers to store their credit card information on EchoStar servers for instant ordering capability via remote control.

Satellite and cable providers are competing vigorously in the bundling of video and non-video offerings. Cable companies, such as Comcast, offer discounts to customers who take both cable services and high-speed Internet service.<sup>41</sup> SBC Communications, Inc. and EchoStar recently joined forces to offer a combined package of high-speed Internet and satellite television services.<sup>42</sup> SBC began selling EchoStar’s DISH Network in its 13-state region in May 2002. The bundling of high-speed data services with video services, with discounts offered to customers who take both services, is a competitive counter-play to cable’s bundled offerings.

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<sup>38</sup> See [www.blockbuster.com](http://www.blockbuster.com); [www.directv.com](http://www.directv.com). DirecTV also has joint marketing relationships with Best Buy, Circuit City and other retailers. *Id.*

<sup>39</sup> “DirecTV Plans Showtime HDTV Launch,” *Multichannel News*, April 22, 2002.

<sup>40</sup> “EchoStar Plans Dish Wallet,” *Multichannel News*, May 16, 2002.

<sup>41</sup> See Comcast website: [http://www.comcastonline.com/code/howmuch.asp?.=](http://www.comcastonline.com/code/howmuch.asp?=.).

<sup>42</sup> “SBC and EchoStar Agree to Sell Each Other’s Services,” *New York Times*, April 18, 2002; “SBC, EchoStar to offer bundled services,” *San Diego Union-Tribune*, April 18, 2002.

SBC has a similar alliance with DirecTV's DirecWay Internet service in certain communities. Some analysts see the SBC-EchoStar bundling arrangement as having more competitive muscle than previous telephone-satellite alliances since the new set-top box will have advanced video and storage capacity and a DSL outlet.<sup>43</sup>

In the area of marketing and promotions, DBS providers continue to pursue cable customers with aggressive ad campaigns comparing themselves to cable.<sup>44</sup> DirecTV Broadband also offered two months of free digital subscriber line (DSL) service to existing cable modem customers at the end of 2001 through May 31, 2002.<sup>45</sup> And it recently announced a new extended monthly payment plan for new subscribers to DirecWay service.<sup>46</sup>

The sum of all this is that DBS has proven to be an enduring and inventive competitor to cable. All of the signs indicate that DBS companies will continue to be formidable competitors in the years ahead.

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<sup>43</sup> "Satellite, DSL team up against cable," CNET News.com, April 19, 2002 (quoting Marc Nabi, Merrill Lynch analyst).

<sup>44</sup> See Appendix B.

<sup>45</sup> "DirecTV Broadband Targets Cable," Multichannel News, May 10, 2002.

<sup>46</sup> "DirecWay Gets Push from DirecTV, SBC," Multichannel News, July 17, 2002.

**B. Various Broadband Companies Are Competing with Cable Operators in Markets Around the Country**

While DBS is the chief competitor to the cable industry nationwide, newer broadband service providers continue to establish themselves as competitive alternatives to incumbent cable operators in particular markets. As the Commission asserted in the Eighth Annual Report, these large, well-financed companies are “carefully selecting communities with favorable demographics, such as high population density, and building systems that are more advanced than the incumbent cable operator.”<sup>47</sup> The ability to sell a bundle of telephone, high speed Internet access, and video programming channels over a single broadband facility (or in combination with wireless or satellite providers) in the most lucrative markets is driving these companies. The ownership of advanced fiber optic facilities and strategic partnerships with electric and gas utilities, possessing access to public rights-of-way, have given these broadband providers key competitive advantages.

RCN Corporation, Knology, and WideOpenWest have experienced some setbacks in the capital markets over the past year, as have cable operators, but they continue to compete with cable operators in large cities across the country. In an effort to broaden its reach to consumers, RCN, for example, recently launched “RCN Essentials,” a new family of bundled services, in Boston, New York, Philadelphia, San Francisco, Los Angeles and Washington, D. C. This package is comprised of its core video programming package and one set-top box; one phone

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<sup>47</sup> Eighth Annual Report, 17 FCC Rcd at 1294. Competitive overbuilders created their own trade association, the Broadband Service Providers Association. The 13 founding BSPA members are Altrio Communications Inc., Carolina Broadband, ClearSource Inc., Everest Connections Corp., Gemini Networks Inc., Grande Communications, Knology Inc., RCN Corp., Seren Innovations Inc., Starpower Communications, Utilicom Networks LLC, WideOpenWest LLC and Western Integrated Networks LLC’s WinFirst. “13 Overbuilders Form Trade Group,” Multichannel News, December 4, 2001.

line with unlimited local calling; and high speed data service with the cable modem included.

This option complements its other package of voice, video and data called “ResiLink.”

RCN also recently introduced “MegaModem,” a high-speed Internet service in San Francisco and Los Angeles, which purports to offer download speeds of up to 3 megabits per second as compared to its regular 1.5 mbps data rate. This is another maneuver to pull customers away from cable and other broadband providers. According to one press report:

At the end of the first quarter 2002, RCN claimed 868,000 connections in seven of the top 10 U.S. markets, including 233,000 voice, 498,000 video and 137,000 data subscribers. Telephony subscribership was up 15 percent, video rose 33 percent and data surged 9 percent in the quarter.<sup>48</sup>

The company also has a video-on-demand trial underway in the Philadelphia area and based on its results will roll out VOD across the country. Overall, RCN “expects to increase its network connections 24 percent this year.”<sup>49</sup>

Another broadband overbuilder, WideOpenWest, acquired cable systems from Americast and SBC Communications, making it the 13<sup>th</sup> largest cable operator in the United States. In March 2002, WOW added cable modem service to its video programming packages and is looking into adding telephony service throughout its service area.<sup>50</sup>

This past year has seen some overbuilders merge to expand their reach and grow their companies. For example, Grande Communications, Inc. and ClearSource Inc. announced plans to merge and expand construction in the region of Texas covering Austin and San Antonio.<sup>51</sup>

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<sup>48</sup> “RCN, WOW Pull Back But Add VOD, Tiering,” Multichannel News, May 20, 2002.

<sup>49</sup> Id.

<sup>50</sup> Id.

<sup>51</sup> “Texas Overbuilders Merge,” Multichannel News, April 30, 2002.



Both companies compete against Time Warner Cable by selling bundled packages of video, voice and data services.

Utilities such as Sigecom (Evansville and Newburg, Indiana) and Seren Innovations (St. Cloud, MN and Contra Costa County, California) are providing packages of bundled video, voice and data services in addition to their traditional product lines.<sup>52</sup> Qwest Communications has introduced the delivery of video programming to telephone customers over existing fiber optic and residential copper wire facilities. This new technology, VDSL (very high speed digital subscriber line) is being offered in the Phoenix, Arizona area, and Boulder and Highlands Ranch, Colorado.<sup>53</sup>

### **C. Video Rentals And Sales of Personal Video Recorders Are Experiencing Significant Growth**

The past year has seen a resurgence of the home video retail and rental industry. As the Commission recognized in the Eighth Annual Report, “the sale and rental of home video, including video cassettes, DVDs, and laser discs,” are “part of the video marketplace because they provide services similar to the premium and pay-per-view offering of MVPDs. The home video industry views cable television, direct broadcast satellite services and broadcast television as its competitors.”<sup>54</sup> Indeed, ninety percent of American households have at least one VCR and DVD technology has grown rapidly since its introduction. The home video industry has always competed with MVPDs but this competition is intensifying with the arrival of more sophisticated on-demand video services from cable and satellite providers.

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<sup>52</sup> See e.g. [www.sigecom.net/residential\\_cable.asp](http://www.sigecom.net/residential_cable.asp) and [www.astound.net](http://www.astound.net).

<sup>53</sup> <http://www.qwest.com/vdsl/learn/overview.html>

<sup>54</sup> Eighth Annual Report, 17 FCC Rcd at 1288.

As evidence of the strength of the video retail and rental industry, Blockbuster's stock price quadrupled in 2001.<sup>55</sup> According to one analyst, "the convenience of sitting at home and not having late fees is compelling, but right now, Blockbuster is way ahead of cable."<sup>56</sup> As a spokesperson for Blockbuster Inc. sees it, "the video retail and rental industry generates about \$20 billion a year and experts predict revenues for video-on-demand will reach about \$641 million by 2006."<sup>57</sup>

In response to competitive on-demand offerings from cable and satellite, Blockbuster plans to test a new subscription service that "would give its customers more flexibility in choosing and watching movies."<sup>58</sup> The service would allow customers to rent all the movies they want to watch for a fixed monthly fee.

The video retail and rental business is buoyed by the steadily increasing consumer demand for DVDs. Recent sales figures show that "DVD players have become the fastest-selling product in the history of the consumer-electronics market."<sup>59</sup> Home theaters, which combine a stereo receiver with a DVD player and speakers, increased 230 percent in 2001 over 2000 and more than 987 percent in the first five months of 2002 compared to 2001.<sup>60</sup>

According to data from the Consumer Electronics Association ("CEA"), DVD penetration is now at 30 percent.<sup>61</sup> The technology has been so successful that Circuit City Stores, Inc. announced that it is phasing out sales of VHS tapes in light of the growing popularity

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<sup>55</sup> "A Blockbuster Turnaround," San Jose Mercury News, December 13, 2001.

<sup>56</sup> Id. (quoting Ryan Jones of the Yankee Group).

<sup>57</sup> "Comcast's new cable service may hurt video store sales," The Detroit News, April 5, 2002.

<sup>58</sup> "Blockbuster, in a Test, to Offer Unlimited Rentals for Fixed Fee," The Wall Street Journal, April 25, 2002.

<sup>59</sup> "DVD a hit at home-theater box office," CNET News.com, July 1, 2002, citing market research firm, NPD Techworld, data.

<sup>60</sup> Id.

of DVDs.<sup>62</sup> Online DVD-rental company, Netflix, had a strong debut on the stock market this year. The on-line company has over 600,000 customers and allows them to order movies on-line and have them shipped via first-class mail to their home. Customers can rent as many movies as they wish per month (3 at a time), with no late fees, for a \$19.95 per month subscription. Expectations are high that Netflix will continue to grow rapidly.<sup>63</sup>

Digital Video Recorders (DVRs), also called personal video recorders (PVRs), are also growing at a strong pace. Both SONICblue's ReplayTV and TiVo reported strong first quarter results and demand for their products.<sup>64</sup> Forecasters predict a bright future for PVR technology in both standalone units and incorporated into other platforms.<sup>65</sup> According to a recent report by the Carmel Group, DVRs should jump from 1.6 million users in 2002 to 28.6 million users by 2008.<sup>66</sup> Meanwhile, PC-makers are not standing still. At the end of this year, Hewlett-Packard, Samsung and other PC manufacturers, for example, will introduce new Microsoft Windows XP computers with an additional software module capable of allowing consumers to use their PCs to record TV programs like a TiVo set-top box.<sup>67</sup>

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<sup>61</sup> [www.digitalbits.com/articles/cema.dvdsales.html](http://www.digitalbits.com/articles/cema.dvdsales.html) (July 2, 2002).

<sup>62</sup> "Electronics Giant replacing VHS movies with DVD," CNN.com, June 21, 2002; "DVD, cameras help gadget growth," CNET News.com, June 24, 2002. Best Buy is also increasing its inventory of DVDs. CNET News.com, June 21, 2002.

<sup>63</sup> "DVD site climbs on Wall Street debut," CNET News.com, May 23, 2002.

<sup>64</sup> "SONICblue Reports Strong Q1 Results; Increases Year-On-Year Revenue More than 100 Percent," Press Release, April 25, 2002; "TiVo's Drive to Profitability on Track with Strong Q1 Performance," Press Release, May 31, 2002.

<sup>65</sup> "The Ad Zappers: Video recorders like TiVo, at first slow to catch on, are shaking up the TV business," Time, June 10, 2002.

<sup>66</sup> "DVR's prime time potential," San Francisco Chronicle, July 15, 2002.

<sup>67</sup> "PCs: Redefining Entertainment," CNET News.com, April 15, 2002.

### **III. THE CABLE INDUSTRY'S RESPONSE TO BURGEONING COMPETITION FROM WELL-ESTABLISHED ALTERNATIVE PROVIDERS HAS BEEN AN ALL-OUT INFRASTRUCTURE UPGRADE AND INVESTMENT IN PROGRAMMING AND NEW ADVANCED SERVICES**

The unabated growth of DBS and other alternatives to cable provide compelling proof of competition in the video marketplace. But the other side of this equation – cable's response to the ever-changing video landscape – is equally compelling. Over the past nine years, the cable industry has transformed itself from a supplier of analog video into a provider of multiple entertainment, information and telecommunications services.

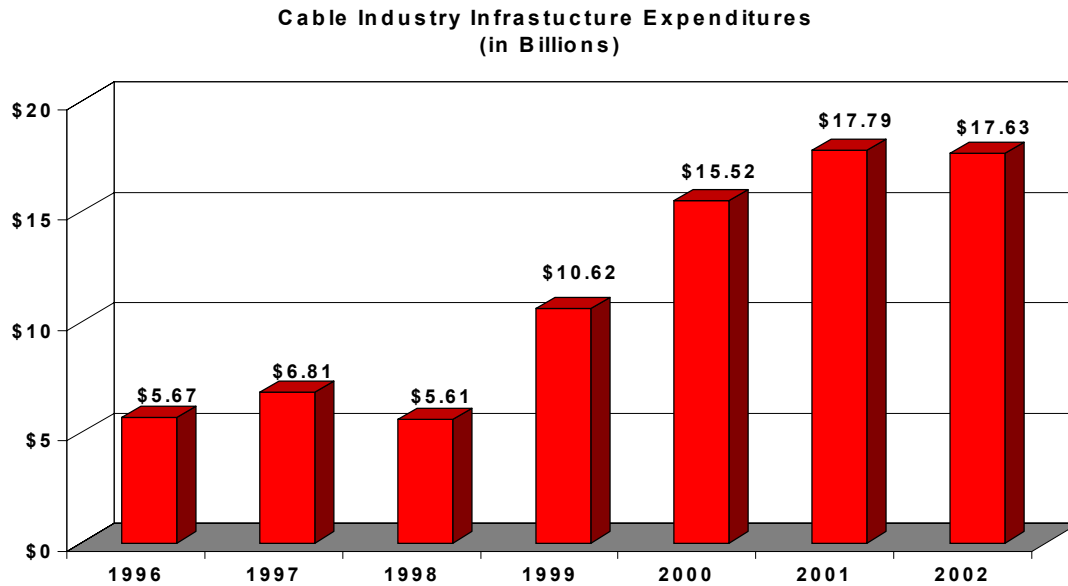
This transformation has carried a high price tag. Indeed, as of May 2002, the cable industry had invested more than \$65 billion in private capital since 1996 to provide advanced digital services to American consumers.<sup>68</sup> More than \$17.7 billion was invested in 2001 alone.<sup>69</sup> In 2002, the cable industry anticipates an additional \$17.6 billion investment to create additional bandwidth for even more digital services for American consumers.<sup>70</sup>

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<sup>68</sup> Kagan World Media, a Media Central/Primedia Company, Cable Financial Databook 2000 and Broadband Cable Financial Databook 2002 at 144.

<sup>69</sup> Kagan World Media, a Media Central/Primedia Company, Broadband Cable Financial Databook, 2002.

<sup>70</sup> Id.



Source: 1996: Kagan World Media, Cable Financial Databook 2000; 1997-2002 Broadband Cable Financial Databook 2002 at 144.

This capital investment in more than one million miles of plant amounts to approximately \$1,000 per subscriber in upgraded cable systems. By year-end 2001, approximately 87% of all cable homes were passed by at least 550 MHz plant – with 74% of cable homes passed by systems with 750 MHz or higher. And more than 70 million households were passed by activated two-way plant, allowing for the deployment of interactive, cable modem and telephony services. By year-end 2001, consumers had purchased nearly 24 million new service units (digital video, high speed Internet and cable telephony).

In the NOI, the Commission asks what advanced offerings, including high-speed Internet access services, video-on-demand, high definition television, and interactive television, and new ways of offering service are being deployed by video programming distributors.<sup>71</sup> As described

<sup>71</sup> Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, MB Docket No. 02-145, Notice of Inquiry, rel. June 14, 2002 at ¶ 20 (“NOI”).

below, cable companies are actively rolling out or preparing to roll out a cornucopia of such services to their customers.

**A. Cable's High-Speed Internet Access Services Are Being Deployed at A Rapid Rate**

As the foremost providers of high-speed services to residential customers, cable companies are leading the way in the deployment of broadband technology. Earlier this year, the Commission confirmed that cable systems, more than any other facilities-based provider of broadband services to residential customers, are rapidly deploying broadband services to an increasing number of potential subscribers.<sup>72</sup> In finding that advanced telecommunications capability is being made available to Americans in a “reasonable and timely manner,”<sup>73</sup> the Commission stated:

We are pleased that our data demonstrate strong growth in the availability of advanced services for residential and small business customers. We are also encouraged by recent developments in technology that has significantly expanded the reach of high-speed services.<sup>74</sup>

Recent data indicate that the cable industry is making broadband Internet services available to increasing numbers of customers – and that increasing numbers are purchasing it. At the end of 2001, according to a study prepared by Morgan Stanley, the service was available to more than 75 million cable subscribers or approximately 66 percent of potential cable

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<sup>72</sup> Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, 17 FCC Rcd 2844, 2864 (2002). (“Third Section 706 Report”).

<sup>73</sup> Id., 17 FCC Rcd at 2884.

<sup>74</sup> Id.

customers.<sup>75</sup> The same study projects that cable modem service will be available to more than 100 million cable subscribers by the end of 2005.<sup>76</sup>

Consumers are purchasing cable's broadband Internet access service at an impressive rate. The Third Section 706 Report found, as of mid-year 2001, that cable's broadband Internet access service was taken by 5.2 million subscribers, a penetration rate of approximately eight percent of the homes capable of receiving the service.<sup>77</sup> This compares to a penetration rate of three percent at the beginning of 2000.<sup>78</sup> The Commission's most recent data puts penetration of cable's broadband Internet access service at 7.1 million lines.<sup>79</sup> Morgan Stanley's estimate is that by the end of 2005, that number will grow to more than 28 million subscribers.<sup>80</sup>

The rate of consumer acceptance of cable's broadband Internet access service has been particularly impressive because numerous competitive alternatives are available. Cable's modem service faces competition from the more well-established dial-up services as well as other facilities-based broadband services. The vast majority of residential Internet access customers continue to obtain service from an Internet Service Provider (ISP) that reaches its customers through dial-up telephone lines.<sup>81</sup>

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<sup>75</sup> Broadband Update: Raising Long-Term Modem Forecast, Morgan Stanley, April 8, 2002, at 8 ("Morgan Stanley Broadband Update").

<sup>76</sup> Id.

<sup>77</sup> Third Section 706 Report, 17 FCC Rcd at 2864.

<sup>78</sup> Id., citing, Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, 15 FCC Rcd 20913, 20952 (2002) ("Second Section 706 Report").

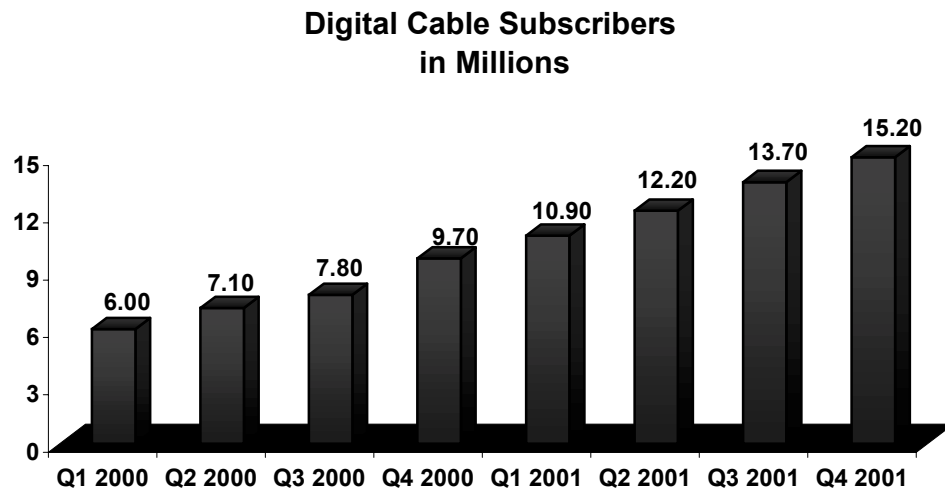
<sup>79</sup> "Federal Communications Commission Releases Data on High-Speed Services for Internet Access," FCC News Release, July 23, 2002, at 2. ("FCC High-Speed Deployment Report").

<sup>80</sup> Morgan Stanley Broadband Update at 3.

<sup>81</sup> Id. at 10.

## **B. Digital Cable is Well-Established**

Last year, analysts heralded cable's "swift digital roll-out" and "ambitious new products and services" designed to compete with DBS.<sup>82</sup> This year, with the rapid deployment of digital set-top equipment, digital cable has moved beyond the introductory phase to become a permanent fixture in many households. At the end of 2001, nearly 21% of U.S. cable customers – or 15.2 million customers -- more than 20 percent of all cable customers -- received digital cable service.



Source: NCTA Research based on company data.

The expanded capacity made possible by digital video compression technology has given program producers new outlets for their creative endeavors. Programmers have launched more than 90 digital channels offering a wide range of genres, including sports, music, movies, children's, family and foreign-language programming. For example, A&E developed Biography Channel and History Channel International; Discovery created its Science, Civilization and Kids

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<sup>82</sup> Annual Assessment of the Status of Competition in the Market for Delivery of Video Programming, CS Docket No. 00-129, Comments of NCTA, filed August 2, 2001 at 26.



channels; Nickelodeon offers Noggin and Nick Too; C-SPAN has C-SPAN 3; and the Weather Channel has Weatherscan Local. There are new Hispanic channels from Liberty's Canales ñ, new music channels from MTV and BET, and separate channels targeting Indian, Italian, Arabic, Filipino, French, South Asian and Chinese viewers from The International Channel.

Fox Sports Digital Nets, a three-network digital multiplex, provides live events and regional sports news taken from Fox Sports Nets's 22 regional outlets nationwide. Digital programming supplier OlympuSAT, Inc. offers cable operators two separate packages of programming – one geared towards families and one targeting the Hispanic market. There are also many additional premium offerings from HBO (HBO Family, HBO Comedy and ActionMAX), Showtime (Showtime FamilyZone, Showtime Beyond and Showtime Women) and Starz Encore (STARZ! Cinema, Encore Action, WAM!).

The Commission seeks comment on how video programming distributors package programming services. Most cable systems offer their customers a choice of two to four analog and digital tiers of video programming consisting of broadcast and satellite-delivered networks, multiple premium entertainment packages of channels, such as HBO, Cinemax, Showtime and Starz!; and four or more “pay-per-view” channels featuring first-run movies and sports events. In addition, digital services may be packaged as stand-alone packages of digital video channels, or in combination with PPV and VOD. And, as the Commission recognized in the Eighth Annual Report, multichannel video services, telephone services and high speed Internet services may be packaged together.<sup>83</sup>

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<sup>83</sup> Eighth Annual Report, 17 FCC Rcd at 1294.

Cable's infrastructure overhaul and digitization of services has had some impact on those services offered. The transition from pure analog systems to combination analog-digital systems has resulted in some repackaging and re-tiering of services to provide more options for consumers. While changes in channel line-ups are generally avoided, such reconfigurations often follow a period of significant growth in system capacity. For example, AT&T Broadband modified its digital tiers by reconfiguring its digital packages to add more non-premium programming for those customers who do not desire premium services. This re-tiering also benefited new networks seeking to gain carriage in digital packages.<sup>84</sup>

### **C. Video-on-Demand and High Definition Television Are a Reality**

As discussed above, the battleground between cable and DBS is moving into the video-on-demand arena. As one analyst put it: "this is real. These [cable] guys are going for this in a huge, huge way. . . . This is the year they're all doing VOD."<sup>85</sup> But they are not all doing it the same way. Some companies are offering VOD tiers to digital cable customers, allowing them to pick from hundreds of movies and original programming each month. Other companies are offering subscription VOD, which has the customer pay a flat monthly fee to order movies or programs from a particular program network. Still others are doing some combination of these approaches.

Comcast Corporation, for example, has launched video-on-demand in 15 markets including southern New Jersey and Philadelphia; Alexandria, Arlington and Chesterfield, VA; Baltimore, MD and suburban counties; Albuquerque, NM; Indianapolis, IN; Southeast MI;

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<sup>84</sup> "AT&T Tweaks Digital Tiers," Multichannel News, May 28, 2002.

<sup>85</sup> "Personalizing TV with On-Demand Services," Los Angeles Times, May 8, 2002, quoting Josh Bernoff of Forrester Research Inc.

Charleston, SC; Savannah, GA; and Mobile, AL. The service enables viewers to pause, rewind, fast-forward and store movies for up to 24 hours from the time of ordering.

Last April, Cox Communications launched VOD to its customers in San Diego County.<sup>86</sup> For \$3.95 a month, a customer may download a movie and watch it anytime within a 24-hour period with pause, rewind, and fast-forward capability. Time Warner has rolled out VOD in Houston and Austin, Texas; Tampa Bay, Florida and New York.<sup>87</sup> Time Warner allows the customer 24 hours to watch the movie as often as he or she wishes for \$3.95 for new releases and \$1.95 for recent releases. Time Warner offers HBO on Demand, Home Box Office's subscription VOD service, which includes movies and original programming. Starz Encore Group offers consumers movies-on-demand for a monthly subscription fee. Showtime also offers a subscription VOD service.

Rainbow Media Holdings' new VOD service, Mag Rack, offers customers a broad range of special interest video magazines, such as Classic Cars, Bridal, Photography Close Up, Club Vegetarian, and Maximum Science. Each selection from the "video magazine rack" provides in-depth information and expert advice in a specific field of interest. The product, launched in September 2001, currently is available as part of Cablevision's iO digital service and is being marketed nationwide to other distributors.<sup>88</sup>

In addition to network-based VOD, cable companies, in response to satellite providers, are starting trials of PVR technology. As one analyst observed, cable companies, like the

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<sup>86</sup> "Cox raises stakes with video-on-demand service," The San Diego Union-Tribune, April 17, 2002.

<sup>87</sup> "Video on demand service is coming to Houston," Houston Chronicle, June 6, 2002; "TW Cable to Offer Video-on-Demand," Newsday, May 10, 2002. Time Warner launched VOD in Minneapolis/St. Paul in July 2002. "Home video services gearing up," St. Paul Pioneer Press, July 12, 2002.

<sup>88</sup> See [www.cablevision.com](http://www.cablevision.com).

satellite providers, “see the boxes as a new way of generating revenue” by encouraging viewers to subscribe to more premium channels and buy more pay-per-view movies.<sup>89</sup>

While still in its early stages, consumer demand and expectations for on-demand programming is likely to rise. And most observers agree that it is important to attracting and retaining customers.

High definition (HDTV) programming is another area where cable is on the leading edge. Time Warner Cable, which serves 18 percent of cable households, has launched high definition digital tiers in more than 40 markets. In major markets like New York, Houston, Minneapolis and Orlando, the tiers include high definition broadcasts of ABC, CBS, NBC and PBS, as well as HBO, Showtime and other high definition cable programming.<sup>90</sup>

Similarly, Comcast has recently launched a high definition tier to more than 1.3 million homes in the Philadelphia area and announced that it would be offering HDTV in the metropolitan Washington area and in Detroit and Indianapolis before the end of this year.<sup>91</sup> Comcast will provide HDTV programming in the city of Washington D.C. in 2003.<sup>92</sup> To further enhance its HDTV offering, Comcast SportsNet will air over 200 professional sporting events a year in HDTV beginning in 2003.

Charter Communications, the fourth largest cable operator, recently announced the launch of HDTV tiers in seven markets including Birmingham, Alabama; South Miami, Florida;

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<sup>89</sup> The Ad Zappers; Video recorders like TiVo, at first slow to catch on, are shaking up the TV business,” Time, June 10, 2002 (quoting Stacy Forbes, an analyst with the investment bank, Janco Partners).

<sup>90</sup> “Time Warner Adds HDTV in Houston,” Multichannel News, November 27, 2000, p.22.

<sup>91</sup> “Comcast Launches HDTV Tier,” Multichannel News Online, October 30, 2001; “High-Definition TV: So Close, and Yet So Far,” Newsday, January 10, 2001, p.C5.

<sup>92</sup> Comcast’s HDTV service in the Washington, D.C. region will include the high definition signal of Washington’s leading public broadcaster, WETA, as well as Comcast SportsNet.

and St. Louis; Missouri.<sup>93</sup> AT&T Broadband will launch HDTV service to its Chicago area customers this summer and plans to add the service in other markets later this year.<sup>94</sup> Cox is providing high definition broadcast programming in Omaha, Nebraska, and Las Vegas, Nevada.<sup>95</sup>

And on the programming front, Discovery Communications launched its “HD Theater,” a 24-hour HDTV channel with initial distribution on EchoStar DISH network, AT&T’s Chicago system and select systems within Charter, Comcast and Cox Communications.<sup>96</sup> Discovery HD Theater will offer content in all the popular categories of real world entertainment on Discovery networks. It joins HBO and Showtime as the leading cable network providers of HDTV.

In fact, HBO’s HD service is providing more high definition programming in any given week than all of the broadcast networks combined. Showtime offers its customers high definition programming, in many cases accompanied by Dolby Digital 5.1 audio. Madison Square Garden airs the home games of the Knicks and Rangers in high definition. Other cable networks are also producing high definition programming.

In a highly competitive video marketplace, market forces are driving the trend toward high definition picture and sound quality. This is why the ten largest MSOs pledged support for voluntary industry actions to speed the transition to digital television proposed by Chairman Powell. These cable companies – AT&T Broadband, AOL-Time Warner, Comcast, Charter Communications, Cox Communications, Adelphia Communications, Cablevision Systems, Mediacom Communications, Insight Communications, and CableOne - collectively serve more

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<sup>93</sup> “Charter Launches HDTV,” Multichannel News, May 29, 2002.

<sup>94</sup> “AT&T to Launch HDTV in Chicago,” Multichannel News, May 7, 2002.

<sup>95</sup> “Cox Brings HDTV to Las Vegas,” Multichannel News, July 22, 2002.

<sup>96</sup> “Discovery Communications Inc. Launches Discovery HD Theater,” News Release, June 17, 2002.

than 60 million cable customers in the United States. They have committed to the following:

- By January 1, 2003, MSOs will offer to carry the signal of up to five commercial or public TV stations, or cable networks, that provide HDTV programming during at least 50 percent of their prime time schedule or a substantial portion of their broadcast week.
- As part of this digital offering, operators may carry other value-added DTV programming that would likewise create an incentive for consumers to purchase DTV's.
- Operators will begin immediately to place orders for integrated HD set-top boxes with digital connectors and provide these boxes to customers who request them.
- And, consistent with the cable industry's October 2001 initiative to promote the retail availability of set-top boxes, operators will support consumers' purchase of HD set-tops from consumer electronics retailers.
- Cable operators will also advertise and market HDTV and other "value-added DTV programming" using a broad variety of promotional tools.<sup>97</sup>

Chairman Powell recently commended the cable companies, which serve more than 85% of subscribers nationwide, for "their significant commitments to make digital programming available to consumers in the markets they serve."<sup>98</sup> Chairman Powell also recognized the commitments of HBO, Showtime and Discovery to provide consumers with a wide range of high definition programming.

#### **D. Interactive Television is Being Deployed Experimentally**

Interactive television services are in the early stages of development. In addition to video-on-demand and personal video recorders, cable operators are experimenting with various interactive enhanced services that will revolutionize the way consumers watch television, use the

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<sup>97</sup> See Letter to FCC Chairman Michael K. Powell from Robert Sachs, President & CEO, NCTA, May 1, 2002.

<sup>98</sup> "Statement by FCC Chairman Michael K. Powell: DTV Plan Update – Progress for Consumers," July 11, 2002.

Internet, access programming, and communicate and shop. The following is a brief description of some of the interactive services being tested by cable operators.

In February 2002, Charter Communications announced the largest deployment of interactive cable channels, or “i-channels,” reaching 500,000 digital customers in 15 systems. The unique channels, developed jointly by Charter and Diego, Inc., provide Charter digital cable customers with on-demand local and national news, weather, sports, entertainment, shopping and financial information. Beginning in November 2001, Charter has launched the i-channel service in California, Alabama, Texas, West Virginia and Massachusetts. The company also has partnered with Two Way TV, Inc. and Diego, Inc. to create a suite of interactive game applications, which is part of an ITV trial in St. Louis.<sup>99</sup>

Cablevision Systems Corporation recently rolled out two services – Totally Hollywood TV and Totally Broadway TV – in the New York region on its iO: Interactive Optimum Digital platform.<sup>100</sup> Totally Hollywood provides information on where and what time films are playing and allows customers to purchase tickets. Totally Broadway TV enables customers to order tickets to Broadway shows. Cablevision also introduced MSG Game Director, which allows fans to control camera angles during home New York Mets games by selecting from various live feeds. The iO: Interactive service also offers, among other things, video-on-demand, digital music, a “click and view” programming guide, and e-mail service through the television set. The service reaches 500,000 homes in Long Island, New York.

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<sup>99</sup> “Charter Tops 500,000 Customers in Interactive Channel Rollout,” Charter Communications Press Release, February 26, 2002.

<sup>100</sup> “Cablevision’s iO Hits Hollywood, Broadway,” Multichannel News, July 8, 2002.

Last year, Insight Communications, in partnership with Commerce.TV and Liberate Technologies, initiated its Insight Digital Mall shopping service in Lexington, Kentucky. This interactive service provides access to hundreds of brand-name products and allows Insight customers to make purchases via remote control.<sup>101</sup>

#### **E. Cable Programming Viewership Has Had Remarkable Gains**

Further evidence of the cable industry's response to competition is its investment in higher quality programming. Cable system operators spent nearly \$9.3 billion on programming in 2001 and will spend upwards of \$10 billion in 2002.<sup>102</sup> This has resulted in phenomenal growth in the number of national cable networks – from 145 in 1996 to 287 today.

Higher quality cable programming has garnered impressive ratings this year.<sup>103</sup> As the attached press release describes, “cable programming networks are poised to further strengthen the medium's growing lead in share of viewers with a raft of unique and innovative original programming scheduled to premier in the weeks and months ahead.”<sup>104</sup> Recent viewership data shows cable extending its viewership lead over the four major broadcast networks.<sup>105</sup> For example, in June 2002, cable networks captured 54 percent of the total prime-time viewing audience, compared to 35 percent for the broadcast networks. In addition, the Cabletelevision Advertising Bureau (CAB) has cited television ratings data showing that ad-supported cable

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<sup>101</sup> “Insight Communications Launches Commerce.TV in Lexington,” Insight Communications Press Release, September 17, 2001.

<sup>102</sup> Similarly, cable network programming expenditures have increased. According to Kagan World Media, the basic cable networks combined will spend \$9.2 billion for programming this year, up from \$7.8 billion in 2001. Kagan World Media, Cable Program Investor, May 10, 2002 at 1.

<sup>103</sup> “Summer cable hits emerge,” Multichannel News, June 25, 2002.

<sup>104</sup> “Cable Networks Aim Higher With Strong, Innovative Original Programming, Semi-Annual Television Critics' Tour Highlights Diversity and Depth of Cable Programming,” NCTA Press Release, July 12, 2002 (see release for a description of upcoming original programs and series on cable networks).

<sup>105</sup> See e.g., “Cable Narrows Gap During May Sweeps,” Multichannel News, May 24, 2002; “Basic Cable Grabs 10-Point Share Edge,” Multichannel News, June 4, 2002.



networks earned more than 50 percent of the primetime viewing share for eight consecutive weeks ending July 21, 2002.<sup>106</sup> This is tangible evidence that the industry's expenditures have enhanced the value of cable service to customers.

Cable program networks also recently received a record number of primetime Emmy nominations from the Academy of Television Arts & Sciences.<sup>107</sup> Seventeen networks garnered 191 nominations for outstanding programming on a wide range of subject matter in a wide range of formats – from movies to mini-series to specials to documentaries. The networks recognized were HBO, A&E, TNT, Showtime, Discovery Channel, Nickelodeon, Comedy Central, TLC, VH1, Bravo, FX, The History Channel, Lifetime, Cartoon Network, E! Entertainment Television, MTV and SCI FI Channel. This acclaim further underscores the innovation and creativity that is nurtured and promoted by cable networks and the value that American viewers receive from cable television.

In addition to its nationally-acclaimed programming, the cable industry continues to innovate in the area of local and regional programming. This includes 24-hour news channels, 24-hour entertainment and lifestyle guides, regional sports channels and public affairs programming. Local and regional cable networks provide the most comprehensive coverage of local political races, debates, and other election-related news.

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<sup>106</sup> “Ad-Supported Cable Averages 53.3 Primetime Share for First Two Months of Summer Season – Ad-Supported Cable Has 15 Point Edge Over Seven Broadcast Networks Combined for Summer-To-Date As It Records Eighth Straight Week of 50+ Shares,” Cable Advertising Bureau Press Release, July 23, 2002.

<sup>107</sup> “Cable Networks Receive Record Number of Primetime Emmy Nominations,” NCTA Press Release, July 18, 2002.

#### IV. THE PERCENTAGE OF VERTICALLY-INTEGRATED PROGRAMMING SERVICES HAS SHARPLY DECLINED

The Commission specifically asks about existing and planned programming services “to assess the extent to which programmers are affiliated with video programming distributors.”<sup>108</sup> As documented in the recent program access proceeding, there has been a dramatic decline in the number of programming services in which cable operators have an ownership interest.<sup>109</sup> In 1992, almost half of all the national cable programming services were owned by cable operators. The Eighth Annual Report showed vertical integration at 35 percent, “after several years of decline.”<sup>110</sup> But, that finding is misleading and masks the even sharper decline that resulted from the separation of Liberty Media from AT&T.

Although Liberty’s program networks are no longer vertically affiliated with AT&T’s large number of cable systems (and most have no other cable operator ownership), Liberty continues to own several cable systems in Puerto Rico. Therefore, the Commission continues to count all of Liberty’s networks as vertically integrated, even though the effect of such limited vertical integration on national concentration issues is minimal. If Liberty’s program networks were treated as non-vertically integrated, as they should be, the percentage of vertically integrated networks would show a further decline, to as little as 24 percent.<sup>111</sup>

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<sup>108</sup> NOI at ¶ 11.

<sup>109</sup> See e.g. Development of Competition and Diversity in Video Programming Distribution; Section 628(c)(5) of the Communications Act: Sunset of Exclusive Contract Prohibition, CS Docket No. 01-290, Comments of NCTA, December 3, 2001.

<sup>110</sup> Eighth Annual Report, 17 FCC Rcd at 1252.

<sup>111</sup> See Implementation of Cable Act Reform Provisions of the Telecommunications Act of 1996, The Commission’s Cable Horizontal and Vertical Integration Limits and Attribution Rules, CS Docket No. 98-82, 96-85, MM Docket No. 94-150, 92-51, 87-154, Reply Comments of NCTA, February 19, 2002. (Statement of Gregory L. Rosston and Howard A. Shelanski, attached to reply comments, at 12 n. 11.)

Today, only six of the fifteen most watched services, according to prime-time ratings, are vertically integrated.<sup>112</sup>

There are a variety of diverse non-vertically integrated program services among the more than 280 services offered nationally by satellite. These networks compete with vertically-integrated networks for viewers, offering a range of programming genres such as news, children's, music, general interest and niche programming. According to NCTA's research, the percentage of vertically-integrated program networks has not only dropped to 24 percent today, but no single cable company has ownership interests in more than 15 percent of satellite-delivered programming services and most cable operators have very low or no ownership interest in programming.

<b>Year</b>	<b>Number of Vertically Integrated Services</b>	<b>Percent of Vertically Integrated Services</b>	<b>Number of Non-Vertically Integrated Services</b>	<b>Percent of Non-Vertically Integrated Services</b>	<b>Total Number of National Programming Services</b>
1992	42	48%	45	52%	87
1994	56	53%	50	47%	106
1995	66	51%	63	49%	129
1996	67	46%	80	54%	147
1997	68	40%	104	60%	172
1998	95	39%	150	61%	245
1999	104	37%	179	63%	283
2000	99	35%	182	65%	281
2001	68	24%	219	76%	287

Source: 1994-2001 FCC Annual Competition Reports; NCTA Research

The decline in vertical integration has paralleled the rise of DBS as a full-fledged competitor to cable. Today's advertiser-supported cable networks compete vigorously for access to as many households as possible in order to maximize their advertising sales. With nationwide

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<sup>112</sup> Id. at Table D-7.

reach, DBS is an important platform for both vertically and non-vertically integrated programming networks.<sup>113</sup> Not surprisingly, nearly all non-vertically integrated satellite-delivered program networks are available on DBS as well as cable.

## **V. COMPATIBILITY AND CONSUMER EQUIPMENT**

### **A. OpenCable Hardware Specifications**

In evaluating the status of the video marketplace, the Commission has asked about the availability and compatibility of consumer equipment used to provide video programming and other services. The cable industry has worked with the consumer electronics industry to promote compatibility for the delivery of digital signals, including high definition signals, between (1) digital set-top boxes and digital televisions; and (2) digital cable systems and integrated digital television sets (i.e., those with set-top functionality included in the set).

At the outset, it must be emphasized that there are no technical impediments to consumers' digital television sets receiving digital (including high definition) programming over their cable systems. Digital set-top boxes are used today which allow cable operators to provide digital broadcast signals, including HD programming, to consumers. Cable systems are delivering high definition signals to DTV sets by using so-called "component analog" connectors between a special high definition cable set-top box and a digital television set. Comcast, Time Warner Cable and Cox provide such set-top boxes in a number of markets where high definition broadcast services are being provided.

Because there is no copy protection of high definition programming as it crosses the component analog connector, the cable and consumer electronics industries have worked to

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<sup>113</sup> See, e.g., Kagan Cable Investor (Mar. 13, 1998) at 12 ("A DBS affiliation pact also means an instant national launch – unlike a cable MSO-level agreement that promises only a gradual, system-by-system roll-out as channel capacity becomes available.")

develop a digital interface that includes copy protection technology. In December 1998, the cable industry and the Consumer Electronics Association agreed to the specifications for such an interface, the so-called “1394” or “firewire” connector. This connector, when coupled with “5C” copy protection,<sup>114</sup> can provide copy protection for high quality digital programming as it crosses between the digital set-top box and the DTV set. In July 2001, the cable industry, along with the satellite industry, announced support for a second digital connector – the DVI (Digital Video Interface) with high-bandwidth digital content protection (HDCP) – for transmission of high definition video content from set-top boxes to television monitors. These two digital interfaces complement each other in their capabilities.<sup>115</sup>

Through the efforts of CableLabs, the cable industry’s R&D consortium, and its OpenCable project, the cable industry developed OpenCable specifications to enable set-top boxes and integrated DTV sets to be sold at retail stores. These specifications permit manufacturers to build set-top boxes and integrated DTV sets that may be used on a variety of cable systems, thus facilitating the portability of such devices. These specifications have been adopted as U.S. standards by the Society of Cable Telecommunications Engineers (“SCTE”) – an ANSI-accredited standards-setting organization.

The security features for these devices will be included in a separate security module – a “Point-of-Deployment” or “POD” module – to be obtained from the cable operator. The digital set-top box or integrated DTV set (“host devices”) will include an interface to accommodate a

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<sup>114</sup> Several companies have developed the “5C” Digital Transmission Content Protection (DTCP) technology. Use of DTCP has been subject to ongoing discussion and the negotiation of terms and conditions between equipment manufacturers and content providers.

<sup>115</sup> The IEEE 1394/5C interface delivers video and audio in its compressed format and has emerged as the preferred tool to interconnect multiple audio/visual (A/V) devices on a common network. The DVI/HDCP interface delivers video in an uncompressed format and provides an efficient and protected way to transmit high definition content and graphics from a set-top box to a display device.

POD. In order to build a device with a POD slot, a manufacturer needs access to patented technology licensed by CableLabs which it may obtain by signing a technology license called the POD-Host Interface License Agreement (“PHILA”).

The PHILA is a license which provides a secure technology (known as DFAST) for the interface between separate security POD modules supplied by the cable operator and retail “hosts” they plug into. It prevents piracy of the digital signal as it passes to the host device. The technology and security tools licensed under PHILA will enable cable operators to bring new “high value” content to consumers, such as newly-released motion pictures in early release windows and video-on-demand. PHILA has been modified in negotiations with CE manufacturers, and the agreement has been signed by Pioneer Cable and Communications Group, Pace Micro Technology PLC, Scientific-Atlanta, Inc., and General Instrument Corporation d/b/a Motorola Broadband Communications Sector. The current version of the PHILA is on the CableLabs website (<http://www.opencable.com/documents.html>).

Beginning in July 1999, the cable and consumer electronics industries conducted a series of joint meetings to address compatibility issues between cable systems and digital television sets. The goal of these discussions was to allow manufacturers to build integrated DTVs, which include the functionality of a set-top box in the set, thereby doing away with the need for an external set-top box. These discussions resulted in two voluntary agreements, announced by CEA and NCTA on February 23, 2000.<sup>116</sup> The first agreement details the technical specifications that allow DTV receivers to connect directly to cable television systems. This agreement assures a cable customer who buys a DTV set that the set can be connected directly to his or her cable wire. The specifications embodied in the technical agreement have been adopted as a U.S.

standard by the SCTE. The second agreement spells out how cable systems will carry, when available, Program and System Information Protocol (“PSIP”) data – the information that aids tuning and navigation in a DTV set. These two agreements set out the technical specifications necessary to allow manufacturers to build digital TV receivers that consumers can connect directly to their cable system and receive DTV programming and services without the use of a set-top box.

**B. The OpenCable Applications Platform (“OCAP”) “Middleware” Specification**

In a related area, CableLab’s OpenCable Applications Platform (“OCAP”) specification – OCAP 1.0 – was completed on December 21, 2001 and published on the OpenCable website ([www.opencable.com](http://www.opencable.com)). These “middleware” specifications, voluntarily developed by the cable industry, will enhance the ability of the consumer electronics industry to build and market integrated DTV sets (as well as digital set-top boxes and other navigation devices) directly to consumers. OCAP permits the downloading and execution of applications, such as program guides, to any OCAP-enabled devices by any cable system supporting OCAP. In addition to enhancing the portability of set-top boxes and DTV sets, OCAP supports the nation-wide portability of applications on such devices. At the time of OCAP’s release, leading multiple system operators sent a letter to CableLabs President and Chief Executive Officer Dr. Richard R. Green, stating that their systems would support CableLabs-certified, OCAP-enabled devices

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<sup>116</sup> See Letter from Robert Sachs, President & CEO, NCTA, and Gary Shapiro, President & CEO, CEA, to Chairman William E. Kennard, FCC, February 22, 2000.

once such equipment becomes commercially available. A copy of that letter was submitted to the Commission.<sup>117</sup>

Devices built to include OCAP provide for more advanced interactive applications -- such as Impulse Pay-Per-View (“IPPV”) or Video-on-Demand (“VOD”) services -- than are practically available through use of the POD module alone. Portable applications, including program guides and games, will make receivers more attractive to customers. OCAP provides an open software platform that all cable systems throughout the country can support. For example, a game written to this specification will be portable across cable systems in the United States. CableLabs developed the OCAP or “middleware” specification to establish a road map for companies to create portable applications for services that operate seamlessly over diverse broadband cable networks.

The OCAP specification itself has had significant input from many different industries, including consumer electronics manufacturers such as Philips and Samsung. The OCAP specification is largely based on the European Multimedia Home Platform (MHP) middleware specification created by the Digital Video Broadcasting (DVB) organization. Indeed, consumer electronics manufacturers in Europe participated in the development of the specification and are already building devices based on the specification. Because OCAP is based upon an existing European specification (MHP), significant economies of scale and scope can be achieved. Sony, Panasonic, Philips, and other major consumer electronics manufacturers have already built televisions and set-top boxes that incorporate MHP.

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<sup>117</sup> See Attachment to Letter from William A. Check, Vice President, Science & Technology, National Cable & Telecommunications Association, to Magalie Roman Salas, Secretary, FCC, PP Docket No. 00-67, December 26, 2001.



Several manufacturers stated their support of OCAP the day the initial specifications were released. For example, upon the publication of the OCAP 1.0 specification, Paul Liao, Chief Technology Officer of Matsushita Electric Corporation of America, said: “Panasonic congratulates CableLabs on their release of the OCAP 1.0 specification. As the specification develops, we look forward to the widespread and early adoption of OCAP by U.S. cable operators. By building on MHP, the OCAP specification is a good step toward a consistent, open, and more global, platform, which should permit the development of an expanding world of advanced interactive cable services.” Canal + Technologies, Liberate Technologies, Microsoft and OpenTV also stated their support of the OCAP platform upon its release.

In February 2002, representatives from nearly 90 companies – including Panasonic, Philips, Samsung, Sharp, Sony and others – participated in an OCAP Developers’ Conference. More than 165 attendees represented a range of companies from start-ups to large international corporations, many of which sent multiple members to the conference from their various business units. The events were sponsored and coordinated by CableLabs in conjunction with 20 vendors actively developing products or services that support the OpenCable platform. CableLabs also recently hosted the first OCAP Interoperability event, which had participation by 14 companies, including consumer electronics manufacturers. During this event, 12 applications were tested on four different set-top box implementations. Interoperability of the applications was demonstrated, to some degree, across all four vendors’ implementations.

CableLabs has also conducted an MHP/OCAP tutorial for more than twenty key operational staff from the largest cable MSOs. This was the first in a series of presentations focused on what it takes for MSOs to be able to operationally support OCAP-enabled devices in the field. The tutorial featured presentations by CableLabs staff as well as key European experts

who have already implemented portions of the MHP specification. These experts came from application, software and device manufacturer Philips, middleware developer Canal +, and application developer Sofia Digital.

OCAP is designed in such a way that cable MSOs can migrate first-generation applications and services already in use by customers onto OCAP-compliant set-tops and televisions. In a major development, TV Guide has already been ported to Java on the Liberate Compact platform (a close derivative of OCAP), running on a Motorola DCT 2000 as shown at the recent NCTA convention. Liberate also has announced work on porting to Java its video-on-demand application. Several European application developers who already have applications running on MHP came to a CableLabs interoperability event in February of this year to demonstrate their intention to migrate those applications to OCAP. These included Alticast, DigiSoft.tv, Philips Softworks, SNAP2, Sofia Digital, and S&T Technologies.

The most recent OCAP/MHP interop was held July 22 – 25, 2002. STB/Middleware Implementations included Advanced Digital Broadcast (ADB), Alticast, Canal+ Technologies, IBM, NEC, Panasonic, Philips, Sony and Thompson. Application providers included Digisoft.tf, Espial, RTL Newmedia-Scrip, Tality and Top 5 Media. Playout Systems (Object Carousels) included Alticast, S&T, Softel, Tality, Tektronix and Thales. Test Tools included Alticast, Digital Keystone, Softel, Tektronix, TestQuest, Thales and Unisoft.

The OCAP specification will allow cable customers to take full advantage of the existing developer community providing interactive technology for the World Wide Web. At the same time, the emerging community using Java technology will be harnessed by this middleware work and can adapt their applications and services to run interchangeably on cable systems worldwide. CableLabs has already begun building an OCAP testing environment, as well as coordinating an

extensive developer support program. This program will provide consumer electronics manufacturers and application developers with reference designs, developer tool kits, authoring tools and other developer support.

On April 19, 2002, CableLabs released OCAP 2.0, which will support even more interactive applications in consumer devices. While OCAP 1.0 defines a Java-based Execution Engine (EE), OCAP 2.0 extends that platform with the addition of web-based technologies like XHTML, XML, and ECMAScript.

### **C. DOCSIS and PacketCable**

As requested in the Notice (at ¶ 32), we address briefly the status of the CableLabs' DOCSIS and PacketCable efforts.

CableLabs has certified 221 different DOCSIS cable modems from 60 different manufacturers, available directly to consumers in consumer electronics stores and over (at least) 100 on-line retailers. For example, Comcast has extensive retail distribution, reaching 1,200 retail outlets at the end of 2001. Cox currently distributes through 498 retail locations, including CompUSA, Circuit City, Best Buy, Office Depot, Good Guys, Radio Shack and Gateway.<sup>118</sup> Motorola cable modems are currently available at over 2,000 retail outlets throughout the United States, including Circuit City, Best Buy and The Wiz, making this line one of the industry's broadest retail cable modem offerings.<sup>119</sup> The prices have declined to the current retail range of \$69 - \$120, depending on the product.

Manufacturers shipped 1.46 million cable modems for North America during the first quarter of 2002. Total DOCSIS cable modem shipments worldwide were 2.1 million units.

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<sup>118</sup> "Cox Downplays Big-Buy Speculation," Multichannel News, April 29, 2002.

<sup>119</sup> Motorola Press Release, April 17, 2002.

**DOCSIS Cable Modem Shipments by Vendor**  
**Q1 2002**

<b>Vendor</b>	<b>Units</b>	<b>Share</b>
Motorola	330,000	22.52%
Toshiba	430,000	29.35%
Thomson	263,000	17.95%
S-A	162,000	11.06%
Askey	38,000	2.59%
Com21	79,583	5.43%
Samsung	16,655	1.14%
Linksys	53,846	3.67%
US Robotics	5,200	0.35%
Terayon	12,000	0.82%
Other	75,000	5.12%
<b>Total</b>	<b>1,465,284</b>	<b>100.00%</b>

Source: Kinetic Strategies, company reports

The percentage of purchased modems has increased substantially relative to purchased modems. Morgan Stanley reports that “Cox and Comcast have been aggressively pushing the retail distribution of modems. At the end of 1Q 2002, approximately 50% of Comcast’s data additions were buying their modem (either via retail outlets or Comcast) while 68% of Cox’s data additions were buying their own modem (57% of their installed base).<sup>120</sup> Kagan World

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<sup>120</sup> Richard Bilotti, Morgan Stanley, July 8, 2002, “Is Broadband Access Leaving the Early Adopter Phase?”

Media projects that by 2004, over 30% of customers will use purchased rather than leased cable modems, up from 10% in 2001.

**Distribution of Cable High-Speed Customers  
Lease v. Purchase of Cable Modems 2001 - 2004**

	2001	2002	2003	2004
<b>Percent of Customers Leasing Cable Modems</b>	90%	82%	75%	68%
<b>Percent of Customers Buying Cable Modems</b>	10%	18%	25%	32%

Source: Kagan World Media, Broadband Technology, May 17, 2002 at 6.

PacketCable is a CableLabs-led initiative aimed at developing interoperable interface specifications for delivering advanced, real-time multimedia services over two-way cable plant. Built on top of the industry's highly successful cable modem infrastructure, PacketCable networks will use Internet protocol (IP) technology to enable a wide range of multimedia services, such as IP telephony, multimedia conferencing, interactive gaming, and general multimedia applications. Working with CableLabs member companies and technology suppliers, the PacketCable project will address issues such as device interoperability and product compliance with the PacketCable specifications. Armstrong Cable Services, Comcast Cable Communications, Inc., and Time Warner Cable currently are conducting field trials using product based on PacketCable specifications. See  
<http://www.packetcable.com/packetcableprimer.html>.

On November 6, 2001, CableLabs announced that its PacketCable test program was ready to qualify vendor product in 2002. To date, more than 40 PacketCable vendors have brought their products to CableLabs for experimentation and assessment. At this point, all

defined network elements are present and functional in the PacketCable lab. There are more than a dozen MSO technical trials with components based on PacketCable specifications under way. These activities have increased significantly this year in preparation for commercial deployments in late 2002 and into 2003.

CableLabs completed a PacketCable testing cycle in June 2002. The focus of this event was validation testing of the Multimedia Terminal Adapters (MTAs) and Cable Modem Termination Systems (CMTS). Like the CableLabs DOCSIS certification program, PacketCable conducts tests to verify that vendor implementations conform to the interface requirements defined in the Issued PacketCable specifications.

## **CONCLUSION**

The statistics and trends of the past year make it abundantly clear that the marketplace for the delivery of video programming is highly competitive. Today consumers have several multichannel video distributors to choose from – and nearly one-quarter choose a provider other than cable. DBS is the leading multichannel video competitor, with a remarkable eight-year growth trend, but consumers also may turn to other sources for video entertainment, including a strong home video rental industry.

Because DBS has the capacity to serve almost all current cable households at minimal incremental cost, it already provides full and effective competition to cable systems. And that competition – along with competition from other wireline and wireless providers of video services – is fundamentally changing the way traditional television is delivered. Competition is giving customers more control over what they watch, when they watch it. It is giving them a variety of non-video options, such as high-speed data and telephone services. It is providing a choice of competitive products at competitive prices. And, as the trends and numbers make clear, it is here to stay.

Respectfully submitted,

**/s/ Daniel L. Brenner**

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July 29, 2002

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## **APPENDIX A**



**Statement of Dr. Debra J. Aron**  
**Director, LECG and Professor, Communications Systems, Northwestern University**

**I. Qualifications and introduction**

1. My name is Debra J. Aron. I am an Adjunct Associate Professor in the School of Communication at Northwestern University and a Director at LECG, LLC in Evanston Illinois. My business address is 1603 Orrington Avenue, Suite 1500, Evanston, IL, 60201.
2. LECG, LLC is an economics and finance consulting firm, providing economic expertise for litigation, regulatory proceedings, and business strategy. Our firm comprises more than 350 economists and professional staff from academe and business, and has offices in North America, South America, Europe, Australia and New Zealand. LECG's practice areas include antitrust analysis, intellectual property, and securities litigation, in addition to specialties in the telecommunications, gas, electric, and health care industries.
3. I received a Ph.D. in economics from the University of Chicago in 1985, where my honors included a Milton Friedman Fund fellowship, a Pew Foundation teaching fellowship, and a Center for the Study of the Economy and the State dissertation fellowship. I was an Assistant Professor of Managerial Economics and Decision Sciences from 1985 to 1992, at the J. L. Kellogg Graduate School of Management, Northwestern University, and a Visiting Assistant Professor of Managerial Economics and Decision Sciences at the Kellogg School from 1993-1995. I was named a National Fellow of the Hoover Institution, a think tank at Stanford University, for the academic year 1992-1993, where I studied innovation and product proliferation in multiproduct firms. Concurrent with my position at Northwestern University, I also held the position of Faculty Research Fellow with the National Bureau of Economic Research from 1987-1990. At the Kellogg School, I have taught M.B.A. and Ph.D. courses in managerial economics, information economics, and the economics and strategy of pricing. I currently teach a Master's course on competition and strategy in communications

markets at Northwestern University. I am a member of the American Economic Association and the Econometric Society, and an Associate member of the American Bar Association.

4. My research focuses on multiproduct firms, innovation, incentives, and pricing, and I have published articles on these subjects in several leading academic journals, including the American Economic Review, the RAND Journal of Economics, and the Journal of Law, Economics, and Organization. My academic publications include research on penalty mechanisms and incentive devices.
5. I have consulted on numerous occasions to the telecommunications and media industries on issues pertaining to the development of competition, the effects of regulatory rules on competition, and strategic and efficient pricing. I have submitted affidavits to the FCC on various issues pertaining to competition analysis, including an analysis of market power in support of an incumbent local exchange carrier's petition for Section 10 forbearance from regulation of high-capacity services in the Chicago LATA, CC Docket No. 95-65. I have conducted analyses of mergers in many other industries under the U.S. Department of Justice and Federal Trade Commission 1992 Horizontal Merger Guidelines, and in other countries, including cable industry mergers. In addition, I have consulted in other industries regarding potential anticompetitive effects of bundled pricing and monopoly leveraging, market definition, and entry conditions, among other antitrust issues, as well as matters related to employee compensation and contracts, and demand estimation. In 1979 and 1980, I worked as a Staff Economist at the Civil Aeronautics Board studying price deregulation of the airline industry. In July 1995, I assumed my current position at LECG. My professional qualifications are detailed in my curriculum vitae, which is attached as Appendix A.
6. I have been asked by the National Cable & Telecommunications Association to respond to comments and inferences made by various industry observers regarding the market power of cable service providers. My discussion will not focus on the market power of specific carriers themselves, which I have not analyzed, but rather will focus on the economic principles that are critical in any market power analysis. In particular, my purpose is to correct two oft-repeated but erroneous inferences regarding market power.

These are (1) the claim that sustained increases in real prices (that is, sustained price growth faster than the rate of inflation) indicates market power; and (2) that market share is a reliable indicator of market power. Neither of these is an economically valid statement and subscription to either one is likely to lead to erroneous conclusions.

## **II. Sustained growth in a firm's real prices does not imply market power**

7. Industry observers have noted in the press with much indignation that prices in the cable television industry have risen faster than the rate of inflation in recent years. These observers argue (or simply claim) that this observation is evidence of market power by the cable companies. High growth rates of prices, however, do not in general create an economic inference of market power.
8. As a basic economic principle, firms with greater market power would be expected to charge higher prices than those with less market power, all else equal. This means that if one were to imagine two markets, A and B, in which cost conditions, demand conditions, and other economic conditions were identical, one would expect prices to be higher in market A than in market B if firms in market A had a greater degree of market power than those in market B. This familiar proposition, that prices are expected to be correlated with market power at a point in time, is virtually tautological.
9. It is not true, however, nor does it follow from the preceding discussion, that firms with higher market power would be expected to demonstrate a higher *growth rate* of prices over time than would firms with lesser market power, all else equal. The latter proposition, though often asserted or implied in the popular press and similar venues, is not supported by economic logic.
10. Similarly, one would not expect firms with high market power necessarily to demonstrate higher growth rate of prices over time than the rate of inflation, nor, conversely, can one expect that a firm with price growth faster than the rate of inflation has an above-average level of market power.

11. Prices change over time for various reasons.<sup>1</sup> At a microeconomic level, firms raise prices because something in their profit calculation changes. This could be a change in demand, a change in the costs of inputs, a change in technology, a change in the competitive characteristics of the market, or other factors. Changes in demand can include increases or decreases due to overall population growth or demographic changes, changes in the prices of related products, or more subjective factors such as changes in fashion or tastes. Changes in the costs of inputs could include interest rate changes, changes in labor costs due to renegotiation of union contracts or increased demands for certain skills in the economy, or changes in the supply of certain types of skills. Cost changes can also result from changes in the costs of material inputs into production, or equipment necessary for production. Changes in technology can include process improvements that lower the cost of production, or that offer new product features or functionalities. Changes in the competitive characteristics of the market may include entry of new providers, mergers, technological changes that lower entry barriers, and regulatory changes. In all cases, one would generally expect that sustained—as opposed to one-time—price changes are the response to sustained changes in one or more of the above-listed factors. For example, if the demand for a product were suddenly to rise significantly, one would expect a relatively rapid adjustment in price, followed by a new plateau at the new price. Over time, the higher price might attract entry into the market or expansion of existing capacity, ultimately driving price back down. But a one-shot demand increase would not be expected to generate sustained growth in price over time. In contrast, continued growth of demand due to population growth could cause price to rise continuously if the rate of entry or expansion in the market did not keep up with the rate of population growth.

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<sup>1</sup> I focus here on changes in the level of prices, rather than the structure of prices. By price structure, (as opposed to pricing levels) I refer to the particular combination of price elements charged. Per-unit charges, flat rates, fixed fees, tiered prices, menus of prices, bundles of units, volume discounts term commitments, volume commitments, and combinations of the above are all different kinds of pricing structures. Pricing levels refer to the dollar value of the rate elements.

A firm might change its pricing structure without necessarily changing its pricing level, and may do so for a variety of strategic, economic, or marketing reasons. I do not consider the specific reason for such changes in this affidavit.

12. The effect that each of the factors I have listed would have on the price would depend on the unique characteristics of the market. For example, the effect on price of a given cost increase would depend on whether the increased costs are fixed or variable costs, the degree of substitutability with other inputs whose prices did not rise, the elasticity of demand, the nature of competition, and other factors.
13. At a macroeconomic level, changes in the overall level of prices (i.e., inflation or deflation) may be triggered by a number of policy variables (such as fiscal, monetary, or trade policy), but these policy changes find their way into prices changes through the individual microeconomic mechanisms I discussed above. For example, macroeconomic policy efforts might increase interest rates, but this ultimately affects the price of various goods and services because interest rate changes affect the costs of production and demand for various goods. The effect on each individual market will be unique to that market.
14. The rate of inflation in the economy is, very roughly, a weighted average of the increase in prices overall in the economy. When there is inflation, some prices will necessarily have increased more than inflation, some less, and some may have decreased. How the prices of each individual product will have changed in a given year will depend on how the various changes I discussed earlier—costs, demand, technology, and competition—have changed in that particular industry, how those unique changes affected the price, and the interaction of the changes with the other characteristics of the market.
15. One reason, then, that one cannot infer the level of market power from observations of price growth is simply that there are many causes of price growth, and all may play a role in any observed price path. Moreover, the price path of any particular industry is not likely to exactly equal the rate of inflation, simply by virtue of the fact inflation is an average of all the disparate price paths in the economy.
16. In particular, the observation that an industry's prices are growing at a rate faster than the rate of inflation establishes no inference about market power. A monopolist who is fully exploiting its market power, as it normally has every incentive to do, would have no

reason to increase its price unless its costs, demand, or technology changed. If it is fully exploiting its market power, it does not benefit from increasing its price because *it is presumably already charging the profit maximizing price*, any deviation from which would simply lower profits.

17. One might ask, though, whether a monopolized industry, or one with firms holding a high degree of market power, would be expected to show higher price growth holding all these other factors constant. The answer in general is no. As I indicated earlier, market power would be expected to lead to higher prices, but not higher price growth. Price growth would typically be associated with market power only to the extent that market power itself is growing over time. Hence, regardless of the existing market power of the ostensible monopolist, if the evidence is that the competitive power of rivals is growing, rather than declining, one would not generally expect the growth in prices to be attributable to market power factors.
18. One might nevertheless seek to justify the claim that sustained, above-average price growth signals market power, on the basis of a theory that market power magnifies the effect of other changes in the market. For example, if the fundamental source of price growth in a market is that costs are growing, one might ask whether cost increases would be passed through more readily by a firm with market power than by a firm in a competitive market.
19. The answer, surprisingly, is no, not as a general rule. The determinants of how much of a cost increase is passed through are somewhat complex, but the general principles are these. In a market that resembles the textbook construct of “perfect competition,” all cost increases (and no more) will be passed through in the long run. In the short run, an increase in variable costs will be partially passed through, with full adjustment in price coming as unprofitable firms drop out of the industry. An increase in fixed costs will be fully passed through in the long run also, as firms drop out of the industry due to the higher cost structure.

20. The other extreme market structure is perfect monopoly. In that textbook setting, how much of a cost increase is passed through to consumers depends on the elasticity of demand for the product. Two simple cases illustrate the fact that there can be many possible outcomes and that, unlike the case of a perfectly competitive market, it is quite possible that substantially less than the full cost increase will be passed through to consumers, even in the long run. First, when demand is linear, half of any increase in variable cost will be passed through to consumers, and half will be absorbed as a decrease in profit. If demand is of the constant elasticity form, more than 100% of the cost increase will be passed through (with less elastic demand resulting in greater passthroughs). Other demand functions will generate other results, the implication being that a monopolized market may pass through less than the total increase in variable costs, all of it, or more, depending on factors that are unique to the market demand. When a monopoly experiences a cost increase, moreover, there is no long run adjustment period comparable to that in a competitive market. The effect of cost increases in a competitive market—that marginal firms exit—is not a factor in a monopolized market. The short run response is the full response.<sup>2</sup>
21. Moreover, in a monopolized market, any increase in fixed (as opposed to variable) costs is fully absorbed by the monopolist. Unlike a competitive market, which fully passes along an increase in fixed costs in the form of higher prices in the long run, a rational monopolist cannot improve its profits by increasing price in response to an increase in fixed costs if it was charging the profit maximizing price to begin with. Hence, considering increases strictly in fixed costs, one would expect the result to be higher prices over time in the competitive market, but no price increases from a monopolist.
22. When the market is characterized by oligopoly, the theoretical predictions about the degree to which price increases would be passed on to consumers is still more complex and is less well established. In my experience teaching pricing theory and strategy, and

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There may be “longer” run effects reflecting adjustments to costs that can only be accomplished over time. For example, if demand increases, the firm might not be able to expand its capacity immediately to satisfy the demand efficiently. Hence, there may be a longer run adjustment by which costs decline as the firm efficiency expands output. These cost adjustments typically, if anything, would cause prices to decline after an initial price increase, but not to continue to increase.

consulting on various pricing issues, I have not seen any general theoretical result in the professional economics literature that describes the degree to which cost increases are passed through as a function of different degrees of market power in oligopoly market structures, nor have I seen any cross-industry statistical analyses of this issue.

23. Hence, to my knowledge, there is no theoretical or empirical basis upon which to conclude that continuous, sustained increases in cost would result in higher growth rates of prices in a monopoly market or an oligopoly market than in a perfectly competitive market.
24. The foregoing discussion pertains to the effect of sustained increases in costs, but one could analyze the effects of other sources of price changes as well, such as technological change. The qualitative conclusion would be the same: there is no theoretical reason to predict as a general matter that greater market power would be expected to lead to higher growth rates of prices, nor is there any reason to predict that a market exhibiting higher growth rates of prices is characterized by firms with greater market power. A specific theory as to how the price behavior in the market in question would deviate from the predictions of standard economic principles, coupled with specific factual evidence, would be necessary to overcome this robust economic principle. For any given industry, if one observes prices rising faster than the rate of inflation, one could test empirically whether the growth rate could be explained in that case by market power. Doing so would require controlling for other factors, such as cost increases, demand increases, and technological changes. But absent some sort of empirical demonstration, there is no basis on general principles for attributing sustained real price growth to market power.

### **III. Market share is not a reliable measure of market power**

25. I understand that industry observers have also argued that the high degree of concentration (i.e., the high market share of the incumbent cable providers) in the market for delivery of video programming demonstrates that the incumbent cable providers have a high degree of market or monopoly power. Market share is not, however,



determinative of market power; indeed, it is not even the primary determinant. This is true as a general matter, but, in particular, in a market in which an incumbent is moving from a protected or de facto monopoly to a competitive environment, market share can be a very misleading measure of market power, and other measures are more informative and useful.

26. A market share analysis focuses on past competitive losses, rather than forward-looking competitive alternatives. In economics, market power can be defined as "the ability ... to raise price above the competitive level without losing so many sales so rapidly that the price increase is unprofitable and must be rescinded."<sup>3</sup> The true determinant of the market power of a given firm, then, is the extent to which competitive alternatives are available or poised to be available, to which customers could turn if the firm attempted to raise price. If competitors could expand their output or enter the market with sufficient capacity in a timely fashion to satisfy the demand for alternatives created by the firm's price increase, those competitors would impose a competitive constraint on the firm's ability and desire to raise its price. That is, they would decrease or eliminate its market power.
27. Most fundamentally, it is the availability of competitive alternatives, not a competitor's current market share, that is relevant to assessing competition. In particular, the ability of actual competitors to expand output to meet consumer demand and/or the ability of potential competitors to enter and provide reasonably substitutable services are the key determinant of market power. The ability of suppliers to respond to potential price increases in a timely fashion can be summarized as the "supply elasticity," which generally measures the extent to which rivals will increase output through expansion and/or entry in response to a given increase in price. Market share can sometimes be a useful, simple proxy for the viability of competitive alternatives, but because it is not

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W.M. Landes, and R.A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review*, vol. 94 (1981), p. 937. The Department of Justice/Federal Trade Commission *1992 Horizontal Merger Guidelines* similarly defines market power as "the ability profitably to maintain prices above competitive levels for a significant period of time," but also note that "sellers with market power also may lessen competition on dimensions other than price, such as product quality, service, or innovation." See the introductory section of the *Merger Guidelines*.

always or necessarily a good proxy for the supply elasticity, it can be misleading and induce erroneous conclusions.

28. Market share data can mask the true competitive situation for several reasons, all of which appear to be relevant to the market for delivery of video programming.
29. The first and most fundamental reason that market shares can be a misleading measure of competition is, as I indicated, that they are a static picture of the market that do not reflect the presence or absence of barriers to expansion and entry into the market. Economists, the courts, and the federal antitrust agencies recognize that the ability of rivals to expand output is critical to determining the ability of any firm in a market to exercise market power. If there are no significant barriers to expansion and/or entry, then market share is essentially irrelevant; no firm, no matter how large its market share, could exert significant market power for any length of time. Ease of expansion of existing competitors or entry of new competitors, therefore, trump market share.
30. Second, market share is a particularly inappropriate measure of competition in a market that is emerging from regulated monopoly environment, because an incumbent's market share tends to understate the degree of competition during a transition to competition, and tends to underestimate a competitor's future competitive significance.<sup>4</sup> A market that was, in recent history, a protected monopoly, may well be much more concentrated than an equally competitive market without a regulated history. Market shares are "path-dependent;" i.e., they depend upon past market shares, even if the market is now highly competitive. An incumbent that prices competitively need not lose customers to competitors; if the incumbent prices so as to reflect the competitive threat, there is no incentive for its existing customers to move. Customers nonetheless receive the benefits of competition even if the incumbent's market share does not change.
31. The shortcomings of market share as a measure of market power are well recognized by U.S. competition policy. The US Department of Justice's Merger Guidelines, for example, memorialize into competitive policy the economic principle that "a merger is

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The *Merger Guidelines* state that "recent or ongoing changes in the market may indicate that the current market share of a particular firm either understates or overstates the firm's future competitive significance." (§ 1.521)

not likely to create or enhance market power or to facilitate its exercise, if entry into the market is so easy that market participants, after the merger, either collectively, or unilaterally, could not profitably maintain a price increase above premerger levels.”<sup>5</sup> The statement is equally applicable to supply responses via the expansion of output from providers who are already in the market. The antitrust courts have also reflected these economic principles.<sup>6</sup>

32. Indeed, the FCC itself has repeatedly recognized the significant shortcomings of market share as a measure of competition. In its 1996 order declaring AT&T non-dominant, the FCC wrote:

It is well established that market share, by itself, is not the sole determining factor of whether a firm possesses market power. Other factors, such as demand and supply elasticities, conditions of entry and other market conditions, must be examined to

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<sup>5</sup> *Merger Guidelines*, §3.0.

<sup>6</sup> See also ABA Section of Antitrust Law, *Antitrust Law Developments* (4<sup>th</sup> ed. 1997), pp. 328-332, a standard source for practicing antitrust attorneys and economists, citing: *United States v. Baker Hughes Inc.*, 908 F.2d 981, 987 (D.C. Cir. 1990) (“In the absence of significant entry barriers, a company probably cannot maintain supracompetitive pricing for any length of time”); *California v. American Stores Co.*, 872 F.2d 837, 842-43 (9<sup>th</sup> Cir. 1989) (recognizing that “[a]n absence of entry barriers into a market constrains anticompetitive conduct, irrespective of the market’s degree of concentration,” but finding that district court could properly have concluded, based on conflicting evidence, that defendant’s proof of ease of entry was not sufficient to overcome plaintiff’s prima facie case), *rev’d on other grounds*, 495 U.S. 271 (1990); *Oahu Gas Serv. v. Pacific Resources, Inc.*, 838 F.2d 360, 366 (9<sup>th</sup> Cir.) (“A high market share, though it may ordinarily raise an inference of monopoly power, ... will not do so in a market with low entry barriers or other evidence of a defendant’s inability to control prices or exclude competitors.”), *cert. denied*, 488 U.S. 870 (1988); *United States v. Waste Mgmt., Inc.*, 743 F.2d 976, 981-83 (2d. Cir. 1984) (prima facie illegality of 48.8% postmerger market share rebutted by ease of entry into Dallas County commercial trash collection market); *United States v. Gillette Co.*, 828 F. Supp. 78m 84 (D.D.C. 1993) (“there is ample evidence that the mechanics of fountain pen design are readily available, thus leaving no technological barriers to [new] entry [and there] ... are also no legal or regulatory barriers”); *Pennsylvania v. Russell Stover Candies, Inc.*, 1993-1 Trade Cas. (CCH) ¶ 70,224, at 70,093-94 (E.D. Pa. 1993) (“defendant can rebut the evidence [of a prima facie violation] by showing that barriers to entry are not significant”); *United States v. Syufy Enters.*, 712 F. Supp. 1386, 1401 (N.D. Cal. 1989) (showing of absence of entry barriers “undermines any claim of monopoly power”), *aff’d*, 903 F.2d 659 (9<sup>th</sup> Cir. 1990); *United States v. Calmar Inc.*, 612 F. Supp. 1298, 1306-07 (D.N.J. 1985) (ease of entry ensured that merger would not injure competition, despite the fact that it resulted in leading firm with 50% of market and HHI of 3000); *Echlin Mfg. Co.*, 105 F.T.C. 410, 485-92 (1985) (Lack of entry barriers into the assembly and sale of carburetor kits eliminates any possibility of a substantial anticompetitive effect); *Frank Saltz & Sons v. Hart Schaffner & Marx*, 1985-2 Trade Cas. (CCH) ¶ 66,768 at 63,724 (S.D.N.Y. 1985) (dictum) (noting that even if concentration had been high, relative ease of adapting a factory from lower quality clothing to better quality men’s suits would have precluded finding an antitrust violation); *United States v. Tracinda Inv. Corp.*, 477 F. Supp. 1093, 1108 (C.D. Cal. 1979) (no barriers to entry into motion picture market); *United States v. M.P.M., Inc.*, 397 F. Supp. 78, 92, 94 (D. Colo. 1975) (entry barriers relatively low in ready-mix cement business).

determine whether a particular firm exercises market power in the relevant market [footnote omitted]. As we noted in the First Interexchange Competition Order, “[m]arket share alone is not necessarily a reliable measure of competition, particularly in markets with high supply and demand elasticities.[footnote omitted]”<sup>7</sup>

33. In its decision in *AT&T v. FCC*, Case No. 99-1535, released January 23, 2001, the DC Circuit court pointed out that in the FCC’s COMSAT Non-dominance Order (1998) it “went so far as to view market share as irrelevant where there was other evidence that a carrier lacked market power.” In that Order, the FCC also rejected evidence of increased profitability as relevant to a determination of market power, as well as finding that COMSAT’s competitive advantages due to size and superior access to certain resources did not preclude the FCC from concluding that COMSAT did not have market power in certain markets.<sup>8</sup> Consistent with the principles I have described, the FCC focused, instead, substantially on supply considerations and noted the importance of intermodal competition (meaning, in that case, competition between cable and satellite carriers) for proper competitive analysis.<sup>9</sup>
34. A firm’s future competitive significance can, of course, in many cases be reasonably reflected in its market share, which is one reason why market shares are considered useful despite (and if one fully recognizes) their limitations. For example, consider the market for a conventional consumer good that requires factory capacity, labor, machinery, and raw materials with which to produce each unit. If there are, say, two firms in the market, each of which is running without substantial excess capacity, and if the production process requires significant intellectual property, expertise, or other unique resources that are possessed by these firms but not easily attainable in a

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<sup>7</sup> Federal Communications Commission, *In the Matter of Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, Order, FCC 95-427, October 12, 1995 (“*AT&T Reclassification Order*”), ¶ 68.

<sup>8</sup> Federal Communications Commission, *COMSAT Corporation, Petition Pursuant to Section 10(c) of the Communications Act of 1934, as amended, for Forbearance from Dominant Carrier Regulation and for Reclassification as a Non-Dominant Carrier*, Order and Notice of Proposed Rulemaking, FCC 98-78, April 24, 1998 (“*COMSAT Reclassification Order*”), ¶ 93.

<sup>9</sup> *COMSAT Reclassification Order*, ¶ 76.

reasonable period of time by any third party, then each firm's market share is likely to be a good proxy for its competitive significance in the near term. If one firm attempted to raise price, the other's ability to increase its output substantially in a short period of time would be constrained by its capacity, and its relative capacity in the market would be roughly summarized by its market share. A firm with, for example, a 20% market share might have limited ability realistically to absorb sufficient quantities of demand that it would be able to defeat the profitability of the rival's price increase.

35. In contrast, in a market in which each firm's costs are characterized by relatively high fixed costs but relatively low incremental costs of providing more units or serving more customers over a large range of output, the firm's existing market share provides very little insight into its ability to expand rapidly to meet the demand created by a competitor's price increase. A firm with a 20% market share in such a market might easily and realistically be able to absorb all of the demand quickly without substantially increasing its costs. The latter cost characteristics are thought to apply to many information goods, such as software, newspapers, and music recordings, as well as, in principle, to delivery of video services over satellite.
36. Hence, the market power of a firm cannot as a general rule be summarized by its market share or, indeed, by any other single statistic or number. Rather, an economically compelling analysis of market power requires an analysis of the ability of existing firms to expand output, to provide a product or service that is viewed as a reasonable substitute for the product or service of the firm at issue by a sufficient subset of customers, and/or the ability of potential entrants to enter the market and provide a reasonable substitute in a timely fashion. Short of such a full analysis, however, some statistics can be useful, if incomplete, tools for examining market power. One such statistic is the firm's share of the *growth* in the market, or what I will call the "growth share." If, for example, a market grew by 100,000 customers (or dollars, or units of output) in a given month, and the firm captured 20,000 of those, its growth share for that month would be 20%. Growth share can be useful because it indicates the degree to which customers view the services of competitors as attractive and substitutable for the services of the firm at issue. It also

provides evidence of the extent to which the prices of the firms are considered to be competitive with one another.

37. Growth shares can be very informative in communications markets such as local telecommunications and video delivery, because these are markets recently emerging from regulation and facing competition. As I explained, in markets recently emerging from regulation, current market share may well reflect historical market shares more than future competitive significance of rivals. In such a case, growth share overcomes the backward looking characteristic of static market shares and provides a valuable measure of the vigor of competitive alternatives.
38. Another measure that can be useful in assessing competition in some markets is the “addressability” of customers by existing competitors. Addressability measures the extent to which the existing facilities of firms can serve new customers without substantial incremental cost. Addressability is a way of reflecting ease of expansion by capturing the degree to which existing facilities of competitors can be expanded or exploited more fully at low cost in order to serve more customers. In the context of a cable provider, all households passed by cable facilities would be considered addressable by the cable provider, assuming other capacity constraints or technical limitations on the cable were not binding on the provider’s technical capability to serve the households. Hence, the addressability of a cable provider in a given geographic area would be measured by the percentage of households passed by its cable. For a satellite provider, all households with necessary line of sight would be addressable, assuming any incremental costs (such as antennas) specific to the customer do not outweigh the benefits of a small but significant price reduction or small but significant increase in quality.

## **APPENDIX B**

**Do You Hate  
Your Cable Service?**

Source: [Reston Connection](#), July 10-16, 2002 at 12.





Source: Los Angeles Times, July 2002. See [www.latimes.p2ionline.com](http://www.latimes.p2ionline.com)



Source: Washington Post, July 10, 2002, A5. Washington Times, July 12, 2002, B4.

**SATISFIED WITH  
ADELPHIA CABLE?**

**WE DIDN'T THINK SO.**

**Get DIRECTV® service now.  
And say good-bye to cable.**

Source: Los Angeles Times, July 2002. See [www.latimes.p2ionline.com](http://www.latimes.p2ionline.com)